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ISAAC ASIMOV • RAY BRADBURY
THEODORE STURGEON
BRIAN W. ALDISS • PHILIP K. DICK
LARRY NIVEN • ROBERT BLOCH
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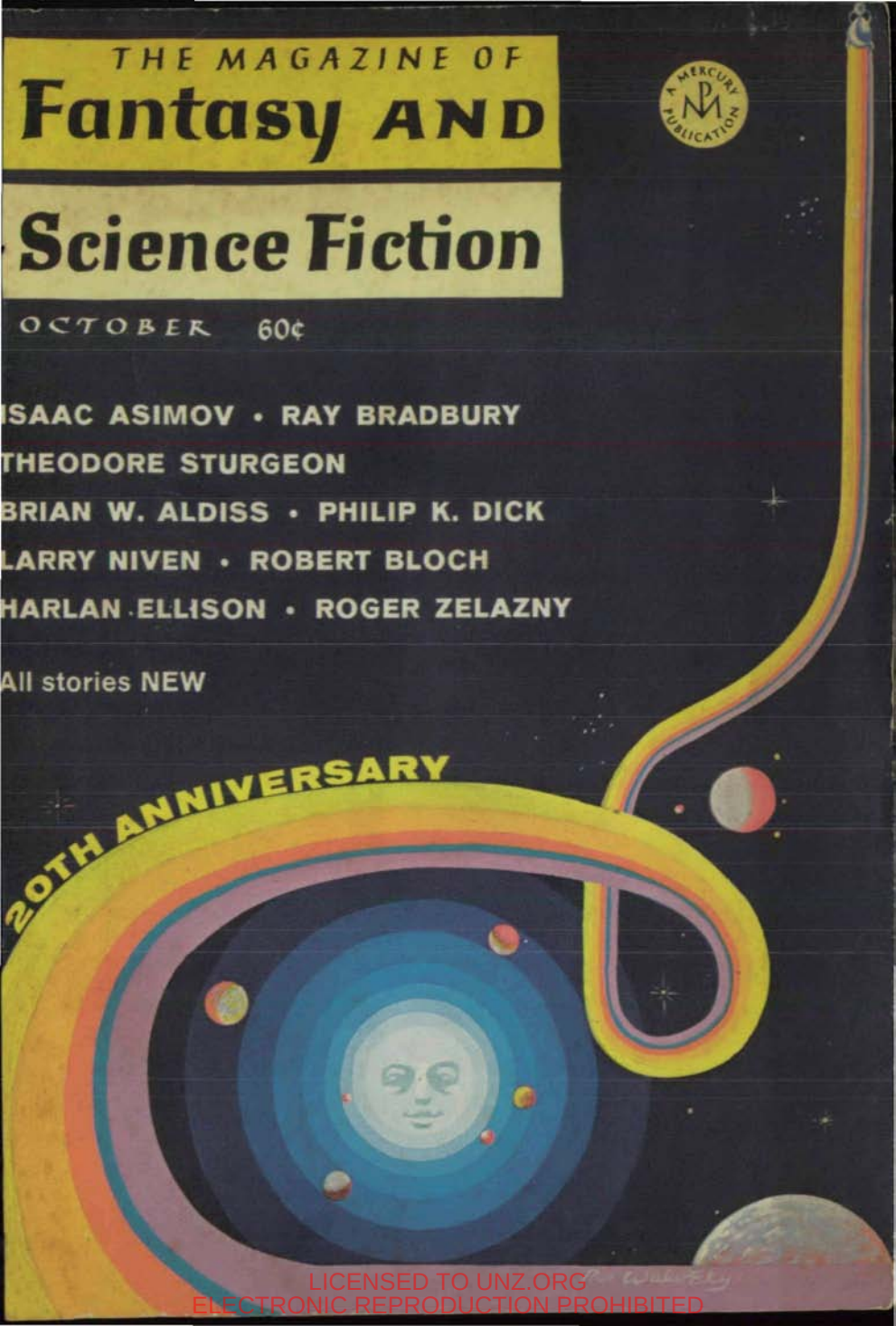
All stories NEW

20TH ANNIVERSARY



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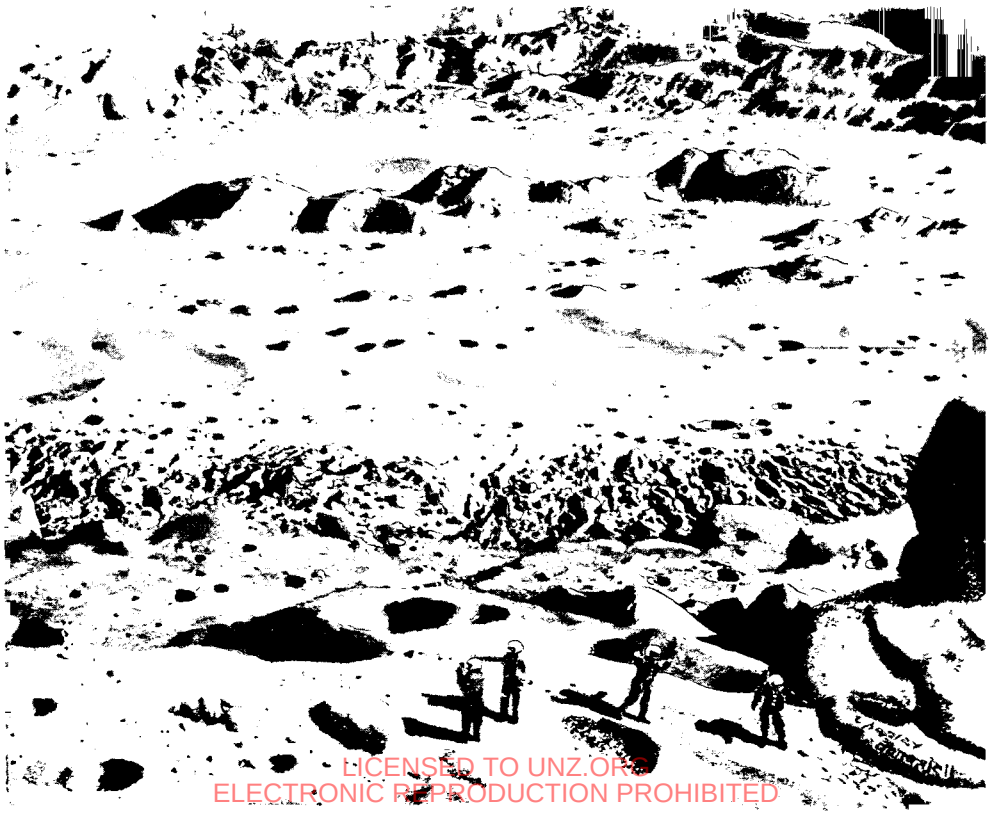

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Fantasy and Science Fiction

OCTOBER

20TH ANNIVERSARY ISSUE

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One nice thing about an anniversary issue is that it gives us a bit of leverage in attempting to pry our busy science editor away from his other projects long enough to write some fiction. The good doctor has responded with the first Susan Calvin robot story in twelve years, a fine sf puzzler about a robot who is as creative and intuitive as she is logical. That's right, she.

FEMININE INTUITION

by Isaac Asimov

The Three Laws of Robotics

1—*A robot may not injure a human being, or, through inaction, allow a human being to come to harm.*

2—*A robot must obey the orders given it by human beings, except where such orders would conflict with the First Law.*

3—*A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.*

For the first time in the history of United States Robots and Mechanical Men, Inc., a robot had been destroyed through accident on Earth itself.

No one was to blame. The air vehicle had been demolished in midair, and an unbelieving investigating committee was wondering whether it really dared announce the evidence that it had been hit by a meteorite. Nothing else could have been fast enough to prevent automatic avoidance; nothing else could have done the damage short of a nuclear blast, and that was out of the question.

Tie that in with a report of a flash in the night-sky just before the vehicle had exploded—and from Flagstaff Observatory, not from an amateur—and the location of a sizable and distinctly meteoric bit of iron freshly gouged into the ground a mile from the site, and what other conclusion could be arrived at?

Still, nothing like that had ever happened before, and calculations of the odds against it yielded

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monstrous figures.—Yet even colossal improbabilities can happen sometimes.

At the offices of United States Robots, the hows and whys of it were secondary. The real point was that a robot had been destroyed.

That, in itself, was distressing.

The fact that JN-5 had been a prototype, the first, after four earlier attempts, to have been placed in the field, was even more distressing.

The fact that JN-5 was a radically new type of robot, quite different from anything ever built before, was abysmally distressing.

The fact that JN-5 had apparently accomplished something before its destruction that was incalculably important and that that accomplishment might now be forever gone, placed the distress utterly beyond words.

It seemed scarcely worth mentioning that along with the robot, the Chief Robopsychologist of United States Robots had also died.

Clinton Madarian had joined the firm ten years before. For five of those years, he had worked uncomplainingly under the grumpy supervision of Susan Calvin.

Madarian's brilliance was quite obvious, and Susan Calvin had quietly promoted him over the heads of older men. She wouldn't, in any case, have deigned to give her reasons for this to Research Director Peter Bogert, but as it happened, no reasons were needed. Or, rather, they were obvious.

Madarian was utterly the reverse of the renowned Dr. Calvin in several very noticeable ways. He was not quite as overweight as his distinct double chin made him appear to be, but even so he was overpowering in his presence, where Susan had gone nearly unnoticed. Madarian's massive face, his shock of glistening red-brown hair, his ruddy complexion and booming voice, his loud laugh; and most of all, his irrepressible self-confidence and his eager way of announcing his successes, made everyone else in the room feel there was a shortage of space.

When Susan Calvin finally retired (refusing, in advance, any cooperation with respect to any testimonial dinner that might be planned in her honor, with so firm a manner that no announcement of the retirement was even made to the news services), Madarian took her place.

He had been in his new post exactly one day when he initiated the JN project.

It had meant the largest commitment of funds to one project that United States Robots had ever had to weigh, but that was something which Madarian dismissed with a genial wave of the hand.

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"Worth every penny of it, Peter," he said, "and I expect you to convince the Board of Directors of that."

"Give me reasons," said Bogert, wondering if Madarian would. Susan Calvin had never given reasons.

But Madarian said, "Sure," and settled himself into the large armchair in the director's office.

Bogert watched the other with something that was almost awe. His own once-black hair was almost white now, and within the decade he would follow Susan into retirement. That would mean the end of the original team that had built United States Robots into a globe-girdling firm that was a rival of the national governments in complexity and importance. Somehow neither he, nor those who had gone before him, ever quite grasped the enormous expansion of the firm.

But this was a new generation. The new men were at ease with the Colossus. They lacked the touch of wonder that would have kept them tiptoeing in disbelief. So they moved ahead, and that was good.

Madarian said, "I propose to begin the construction of robots without constraint."

"Without the Three Laws? Surely—"

"No, Peter. Are those the only constraints you can think of? Hell, you contributed to the design of the early positronic brains. Do I have to tell you that quite aside from the Three Laws, there isn't a pathway in those brains that isn't carefully designed and fixed? We have robots planned for specific tasks, implanted with specific abilities."

"And you propose—"

"That at every level below the Three Laws, the paths be made open-ended. It's not difficult."

Bogert said, dryly, "It's not difficult, indeed. Useless things are never difficult. The difficult thing is fixing the paths and making the robot useful."

"We make it needlessly difficult. Fixing the paths required a great deal of effort because the Principle of Uncertainty is important in particles the mass of positrons and usually one feels the uncertainty effect must be minimized. Yet why must it? If we arrange to have the Principle just sufficiently prominent to allow the crossing of paths unpredictably—"

"We have an unpredictable robot."

"We have a *creative* robot," said Madarian, with a trace of impatience. "Peter, if there's anything a human brain has that a robotic brain has never had, it's the trace of unpredictability that comes from the effects of uncertainty at the subatomic level. I admit that this effect has never been demonstrated experimentally

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within the nervous system, but without that the human brain is not superior to the robotic brain in principle."

"And you think that if you introduce the effect into the robotic brain, the human brain will become not superior to the robotic brain in principle."

"That," said Madarian, "is exactly what I believe."

They went on for a long time after that.

The Board of Directors clearly had no intention of being easily convinced.

Scott Robertson, the largest shareholder in the firm, said, "It's hard enough to manage the robot industry as it is, with public hostility to robots forever on the verge of breaking out into the open. If the public gets the idea that robots will be uncontrolled —oh, don't tell me about the Three Laws—the average man won't believe the Three Laws will protect him if he as much as hears the word 'uncontrolled'."

"Then don't use it," said Madarian, "Call the robot—call it 'intuitive'."

"An intuitive robot," someone muttered. "A girl robot?"

A smile made its way about the conference table.

Madarian seized on that. "All right. A girl robot. Our robots are sexless, of course, and so will this one be, but we always act as though they're males. We give them male petnames and call them he and him. Now this one, if we consider the nature of the mathematical structuring of the brain which I have proposed, would fall into the JN-coordinate system. The first robot would be JN-1, and I've assumed that it would be called John-1.—I'm afraid that is the level of originality of the average roboticist. But why not call it Jane-1, damn it? If the public has to be let in on what we're doing, we're constructing a feminine robot with intuition."

Robertson shook his head, "What difference would that make? What you're saying is that you plan to remove the last barrier which, in principle, keeps the robotic brain inferior to the human brain. What do you suppose the public reaction will be to that?"

"Do you plan to make that public?" said Madarian. He thought a bit and then said, "Look. One thing the general public believes is that women are not as intelligent as men."

There was an instant apprehensive look on the face of more than one man at the table and a quick look up and down as though Susan Calvin were still in her accustomed seat.

Madarian said, "If we announce a female robot, it doesn't matter what she is. The public

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will automatically assume she is mentally backward. We just publicize the robot as Jane-1, and we don't have to say another word. We're safe."

"Actually," said Peter Bogert, quietly, "there's more to it than that. Madarian and I have gone over the mathematics carefully, and the JN-series, whether John or Jane, would be quite safe. They would be less complex and intellectually capable, in an orthodox sense, than many another series we have designed and constructed. There would only be the one added factor of, well, let's get into the habit of calling it 'intuition'."

"Who knows what it would do," muttered Robertson.

"Madarian has suggested one thing it can do. As you all know, the Space Jump has been developed in principle. It is possible for men to attain what is, in effect, hyper-speeds beyond that of light and to visit other stellar systems and return in negligible time —weeks at the most."

Robertson said, "That's not new to us. It couldn't have been done without robots."

"Exactly, and it's not doing us any good because we can't use the hyper-speed drive except perhaps once as a demonstration, so that U.S. Robots gets little credit. The Space Jump is risky; it's fearfully prodigal of energy and therefore it's enormously expensive. If we were going to use it anyway, it would be nice if we could report the existence of a habitable planet. Call it a psychological need. Spend about twenty billion dollars on a single Space Jump and report nothing but scientific data, and the public wants to know why their money was wasted. Report the existence of a habitable planet, and you're an interstellar Columbus, and no one will worry about the money."

"So?"

"So where are we going to find a habitable planet? Or put it this way—which star within reach of the Space Jump as presently developed, which of the 300,000 stars and star-systems within three hundred light-years has the best chance of having a habitable planet? We've got an enormous quantity of details on every star in our 300-light-year neighborhood and a notion that almost every one has a planetary system. But which has a *habitable* planet? Which do we visit?—We don't know."

One of the directors said, "How would this Jane-robot help us?"

Madarian was about to answer that, but he gestured slightly to Bogert and Bogert understood. The director would carry more weight. Bogert didn't particularly like the idea; if the JN-series proved a fiasco, he was making himself prominent enough in connection with it to insure that the sticky fingers of blame would cling to him. On the other hand, re-

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tirement was not all that far off, and if it worked, he would go out in a blaze of glory. Maybe it was only Madarian's aura of confidence, but Bogert had honestly come to believe it would work.

He said, "It may well be that somewhere in the libraries of data we have on those stars, there are methods for estimating the probabilities of the presence of Earth-type habitable planets. All we need to do is understand the data properly, look at them in the appropriate creative manner, make the correct correlations. We haven't done it yet. Or if some astronomer has, he hasn't been smart enough to realize what he has.

"A JN-type robot could make correlations far more rapidly and far more precisely than a man could. In a day, it would make and discard as many correlations as a man could in ten years. Furthermore, it would work in truly random fashion, whereas a man would have a strong bias based on preconception and on what is already believed."

There was a considerable silence after that. Finally, Robertson said, "But it's only a matter of probability, isn't it? Suppose this robot said, 'The highest-probability habitable-planet within so-and-so light-years is Squidgee-17,' or whatever, and we go there and find that a probability is only a probability and that there are no habitable planets after all. Where does that leave us?"

Madarian struck in this time. "We still win. We know how the robot came to the conclusion because it—she—will tell us. It might well help us gain enormous insight into astronomical detail and make the whole thing worthwhile even if we don't make the Space Jump at all. Besides, we can then work out the five most probable sites of planets, and the probability that *one* of the five has a habitable planet may then be better than 0.95. It would be almost sure—"

They went on for a long time after that.

The funds granted were quite insufficient, but Madarian counted on the habit of throwing good money after bad. With two hundred million about to be lost irrevocably when another hundred million could save everything, the other hundred million would surely be voted.

Jane-1 was finally built and put on display. Peter Bogert studied it —her—gravely. He said, "Why the narrow waist? Surely that introduces a mechanical weakness?"

Madarian chuckled, "Listen, if we're going to call her Jane, there's no point in making her look like Tarzan."

Bogert shook his head, "Don't like it. You'll be bulging her higher up to give the appearance of

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breasts next, and that's a rotten idea. If women start getting the notion that robots may look like women, I can tell you exactly the kind of perverse notions they'll get, and you'll *really* have hostility on their part.

Madarian said, "Maybe you're right at that. No woman wants to feel replaceable by something with none of her faults. Okay."

Jane-2 did not have the pinched waist. She was a somber robot, which rarely moved or spoke.

Madarian had rarely come rushing to Bogert with items of news during her construction, and that had been a sure sign that things were going poorly. Madarian's ebullience under success was overpowering. He would not hesitate to invade Bogert's bedroom at 3 AM with a hot-flash item rather than wait for the morning. Bogert was sure of that.

Now that Madarian seemed subdued, with his usually florid expression nearly pale, his round cheeks somehow pinched, Bogert said, with a feeling of certainty, "She won't talk."

"Oh, she talks." Madarian sat down heavily and chewed at his lower lip. "Sometimes, anyway," he said.

Bogert rose and circled the robot. "And when she talks, she makes no sense, I suppose.—Well, if she doesn't talk, she's no female, is she?"

Madarian tried a weak smile for size and abandoned it. He said, "The brain, in isolation, checked out."

"I know," said Bogert.

"But once that brain was put in charge of the physical apparatus of the robot, it was necessarily modified, of course."

"Of course," agreed Bogert, unhelpfully.

"But unpredictably and frustratingly. The trouble is that when you're dealing with n-dimensional calculus of uncertainty, things are—"

"Uncertain?" said Bogert. His own reaction was surprising him. The company investment was already most sizable, and almost two years had elapsed, yet the results were, to put it politely, disappointing. Still, he found himself jabbing at Madarian and finding himself amused in the process.

Almost furtively, Bogert wondered if it weren't the absent Susan Calvin he was jabbing at. Madarian was so much more ebullient and effusive than Susan could ever possibly be—when things were going well. He was also far more vulnerably down in the dumps when things weren't going well, and it was precisely under pressure that Susan never cracked. The target that Madarian made could be a neatly punctured bull's-eye, as recompense for the target Susan had never allowed herself to be.

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Madarian did not react to Bogert's last remark any more than Susan Calvin would have done; not out of contempt, which would have been Susan's reaction, but because he did not hear it.

He said, argumentatively, "The trouble is the matter of recognition. We have Jane-2 correlating magnificently. She can correlate on any subject, but once she's done so, she can't recognize a valuable result from a valueless one. It's not an easy problem; judging how to program a robot to tell a significant correlation, when you don't know what correlations she will be making."

"I presume you've thought of lowering the potential at the W-21 diode junction and sparking across the—"

"No, no, no, no—" Madarian faded off into a whispering diminuendo. "You can't just have it spew out everything. We can do that for ourselves. The point is to have it recognize the crucial correlation and draw the conclusion. Once that is done, you see, a Jane robot would snap out an answer by intuition. It would be something we couldn't get ourselves except by the oddest kind of luck."

"It seems to me," said Bogert, dryly, "that if you had a robot like that, you would have her do routinely what, among human beings, only the occasional genius is capable of doing."

Madarian nodded vigorously, "Exactly, Peter. I'd have said so myself if I weren't afraid of frightening off the execs. Please don't repeat that in their hearing."

"Do you really want a robot genius?"

"What are words? I'm trying to get a robot with the capacity to make random correlations at enormous speeds, together with a key-significance high-recognition quotient. And I'm trying to put *those* words into positronic field equations. I thought I had it, too, but I don't. Not yet."

He looked at Jane-2 discontentedly, and said, "What's the best significance you have, Jane?"

Jane-2's head turned to look at Madarian, but she made no sound, and Madarian whispered with resignation, "She's running that into the correlation banks."

Jane-2 spoke tonelessly at last. "I'm not sure." It was the first sound she had made.

Madarian's eyes rolled upward, "She's doing the equivalent of setting up equations with indeterminate solutions."

"I gathered that," said Bogert. "Can you go anywhere at this point, or do we pull out now and cut our losses at half a billion?"

"Oh, I'll get it," muttered Madarian.

Jane-3 wasn't it. She was never as much as activated and Madarian was in a rage.

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It was human error. His own fault, if one wanted to be entirely accurate. Yet though Madarian was utterly humiliated, others remained quiet. Let him who has never made an error in the fearsomely intricate mathematics of the positronic brain fill out the first memo of correction.

Nearly a year passed before Jane-4 was ready. Madarian was ebullient again. "She does it," he said, "She's got a good high-recognition quotient."

He was confident enough to place her on display before the Board and have her solve problems. Not mathematical problems —any robot could do that—but problems where the terms were deliberately misleading without being actually inaccurate.

Bogert said, afterward, "That doesn't take much, really."

"Of course not. It's elementary for Jane-4, but I had to show them something, didn't I?"

"Do you know how much we've spent so far?"

"Peter, do you know how much we've got back? These things don't go on in a vacuum, you know. I've had over three years of hell over this, if you want to know, but I've worked out new techniques of calculation that will save us a minimum of fifty thousand dollars on every new type of positronic brain we design, from now on in forever. Right?"

"Well—"

"Well me no wells. It's so. And it's my personal feeling that n-dimensional calculus of uncertainty can have any number of other applications if we have the ingenuity to find them and my Jane robots *will* find them. Once I've got exactly what I want, the new JN-series will pay for itself inside of five years, even if we triple what we've invested so far."

"What do you mean by 'exactly what you want'. What's wrong with Jane-4?"

"Nothing. Or nothing much. She's on the track, but she can be improved and I intended to do so. I thought I knew where I was going when I designed her. Now I've tested her and I *know* where I'm going. I intend to get there."

Jane-5 was it. It took Madarian well over a year to produce her, and there he had no reservations; he was utterly confident.

Jane-5 was shorter than the average robot, slimmer. Without being a female caricature as Jane-1 had been, she managed to possess an air of femininity about herself despite the absence of a single clearly feminine feature.

"It's the way she's standing," said Bogert. Her arms were held gracefully, and somehow the torso managed to give the impression of curving slightly when she turned.

Madarian said, "Listen to her. —How do you feel, Jane?"

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"In excellent health, thank you," said Jane-5, and the voice was precisely that of a woman; it was a sweet and almost disturbing contralto.

"Why did you do that, Clinton?" said Peter, startled and beginning to frown.

"Psychologically important," said Madarian. "I want people to think of her as a woman; to treat her as a woman; to *explain*."

"What people."

Madarian put his hands in his pockets and stared thoughtfully at Bogert. "I would like to have arrangements made for Jane and myself to go to Flagstaff."

Bogert couldn't help but note that Madarian didn't say Jane-5. He made use of no number this time. She was *the* Jane . . . He said, doubtfully, "To Flagstaff? Why?"

"Because that's the world center for general planetology, isn't it? It's where they're studying the stars and trying to calculate the probability of habitable planets, isn't it?"

"I know that, but it's on Earth."

"Well, and I surely know that."

"Robotic movements on Earth are strictly controlled. And there's no need for it. Bring a library of books on general planetology here and let Jane absorb them."

"*No!* Peter, will you get it through your head that Jane isn't the ordinary logical robot; she's intuitive."

"So?"

"So how can we tell what she needs, what she can use, what will set her off? We can use any metal model in the factory to read books; that's frozen data and out-of-date besides. Jane must have living information; she must have tones of voice; she must have side-issues; she must have total irrelevancies, even. How the devil do we know what or when something will go click-click inside her and fall into a pattern? If we knew, we wouldn't need her at all, would we?"

Bogert began to feel harassed. He said, "Then bring the men here; the general planetologists."

"Here won't be any good. They'll be out of their element. They won't react naturally. I want Jane to watch them at work; I want her to see their instruments, their offices, their desks, everything about them that she can. I want you to arrange to have her transported to Flagstaff. And I'd really like not to discuss it any further."

For a moment he almost sounded like Susan. Bogert winced, and said, "It's complicated making such an arrangement. Transporting an experimental robot—"

"Jane isn't experimental. She's the fifth of the series."

"The other four weren't really working models."

Madarian lifted his hands in helpless frustration, "Who's forc-

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ing you to tell the government that."

"I'm not worried about the government. It can be made to understand special cases. It's public opinion. We've come a long way in fifty years, and I don't propose to be set back twenty-five of them by having you lose control of a—"

"I won't lose control. You're making foolish remarks. Look! U. S. Robots can afford a private plane. We can land quietly at the nearest commercial airport and be lost in hundreds of similar landings. We can arrange to have a large ground-car with an enclosed body meet us and take us to Flagstaff. Jane will be crated and it will be obvious that some piece of thoroughly non-robotic equipment is being transported to the labs. We won't get a second look from anyone. The men at Flagstaff will be alerted and will be told the exact purpose of the visit. They will have every motive to cooperate and to prevent a leak."

Bogert pondered. "The risky part will be the plane and the ground-car. If anything happens to the crate—"

"Nothing will."

"We might get away with it if Jane is deactivated during transport. Then even if someone finds out she's inside—"

"No, Peter. That can't be done. Uh-uh. Not Jane-5. Look, she's been free-associating since she was activated. The information she possesses can be put into freeze during deactivation but the free-associations, never. No, sir, she can't ever be deactivated."

"But, then, if somehow it is discovered that we are transporting an activated robot—"

"It won't be found out."

Madarian remained firm and the plane eventually took off. It was a late-model automatic Computo-jet, but it carried a human pilot—one of U. S. Robots' own employees—as backup. The crate containing Jane arrived at the airport safely, was transferred to the ground-car and reached the Research Laboratories at Flagstaff without incident.

Peter Bogert received his first call from Madarian not more than an hour after the latter's arrival at Flagstaff. Madarian was ecstatic and, characteristically, could not wait to report.

The message arrived by tubed laser-beam, shielded, scrambled, and ordinarily impenetrable, but Bogert felt exasperated. He knew it could be penetrated if someone with enough technological ability —the government, for example— was determined to do so. The only real safety lay in the fact that the government had no reason to try. At least, Bogert hoped so.

He said, "For God's sake, do you have to call?"

Madarian ignored him entirely. He burbled, "It was an inspira-

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tion. Sheer genius, I tell you."

For a while, Bogert stared at the receiver. Then he shouted, incredulously, "You mean you've got the answer? Already?"

"No, no! Give us time, damn it. I mean the matter of her voice was an inspiration. Listen, after we were chauffeured from the port to the main administration building at Flagstaff, we uncrated Jane and she stepped out of the box. When that happened, every man in the place stepped back. Scared! Nitwits! If even scientists can't understand the significance of the Laws of Robotics, what can we expect of the average untrained individual? For a minute there I thought: This will all be useless. They won't talk. They'll be keying themselves for a quick break in case she goes berserk, and they'll be able to think of nothing else."

"Well, then, what are you getting at?"

"So then she greeted them routinely. She said, 'Good afternoon, gentlemen. I am so glad to meet you,' and it came out in this beautiful contralto.—That was it. One man straightened his tie, and another ran his fingers through his hair. What really got me was that the oldest guy in the place actually checked his fly to make sure it was zipped. They're all crazy about her now. All they needed was the voice. She isn't a robot any more; she's a girl."

"You mean they're talking to her?"

"*Are* they talking to her! I should say so. I should have programed her for sexy intonations. They'd be asking her for dates right now, if I had. Talk about conditioned reflex. Listen, men respond to voices. At the most intimate moments, are they looking? It's the voice in your ear—"

"Yes, Clinton, I seem to remember. Where's Jane now?"

"With them. They won't let go of her."

"Damn! Get in there with her. Don't let her out of your sight, man."

Madarian's calls thereafter, during his ten-day stay at Flagstaff, were not very frequent and became progressively less exalted.

Jane was listening carefully, he reported, and occasionally she responded. She remained popular. She was given entry everywhere. But there were no results.

Bogert said, "Nothing at all?"

Madarian was at once defensive, "You can't say nothing at all. It's impossible to say nothing at all with an intuitive robot. You don't know what might not be going on inside her. This morning she asked Jensen what he had for breakfast."

"Rossiter Jensen, the astrophysicist?"

"Yes, of course. As it turned out, he didn't have breakfast that

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morning. Well, a cup of coffee."

"So Jane's learning to make small talk. That scarcely makes up for the expense—"

"Oh, don't be a jackass. It wasn't small talk. Nothing is small talk for Jane. She asked because it had something to do with some sort of cross-correlation she was building in her mind."

"What can it possibly—"

"How do I know? If I knew, I'd be a Jane myself and you wouldn't need her. But it has to mean something. She's programed for high motivation to obtain an answer to the question of a planet with optimum habitability/distance and—"

"Then let me know when she's done that and not before. It's not really necessary for me to get a blow-by-blow description of possible correlations."

He didn't really expect to get notification of success. With each day, Bogert grew less sanguine, so that when the notification finally came, he wasn't ready. And it came at the very end.

That last time, when Madarian's climactic message came, it came in what was almost a whisper. Exaltation had come complete circle, and Madarian was awed into quiet.

"She did it," he said. "She did it. After I all but gave up, too. After she had received everything in the place and most of it twice and three times over and never said a word that sounded like anything—I'm on the plane now, returning. We've just taken off."

Bogert managed to get his breath, "Don't play games, man. You have the *answer*? Say so, if you have. Say it plainly."

"She has the answer. She's given me the answer. She's given me the names of three stars within 80 light-years which, she says, have a 60 to 90 percent chance of possessing one habitable planet each. The probability that at least one has is 0.972. It's almost certain. And that's just the least of it. Once we get back, she can give us the exact line of reasoning that led her to the conclusion, and I predict that the whole science of astrophysics and cosmology will —"

"Are you sure—"

"You think I'm having hallucinations? I even have a witness. Poor guy jumped two feet when Jane suddenly began to reel out the answer in her gorgeous voice."

And that was when the meteorite struck, and in the thorough destruction of the plane that followed, Madarian and the pilot were reduced to gobbets of bloody flesh and no usable remnant of Jane was recovered.

The gloom at U.S. Robots had never been deeper. Robertson attempted to find consolation in the fact that the very completeness of the destruction had utterly hidden

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the illegalities of which the firm had been guilty.

Bogert shook his head, and mourned. "We've lost the best chance U. S. Robots ever had of gaining an unbeatable public image, of overcoming the damned Frankenstein complex. What it would have meant for robots to have one of them work out the solution to the habitable-planet problem, after other robots had helped work out the Space Jump. Robots would have opened the Galaxy to us. And if at the same time we could have driven scientific knowledge forward in a dozen different directions as we surely would have— Oh, God, there's no way of calculating the benefits to the human race, and to us."

Robertson said, "We could build other Janes, couldn't we? Even without Madarian?"

"Sure we could. But can we depend on the proper correlation again? Who knows how low-probability that final result was? What if Madarian had had a fantastic piece of beginner's luck? And then to have an even more fantastic piece of bad luck? A meteorite zeroing in— It's simply unbelievable—"

Robertson said in a hesitating whisper, "It couldn't have been—meant. I mean if we weren't *meant* to know and if the meteorite was a judgment—from—"

He faded off under Bogert's withering glare.

Bogert said, "It's not a dead loss, I suppose. Other Janes are bound to help us in some ways. And we can give other robots feminine voices, if that will help encourage public acceptance—though I wonder what the women would say. If we only knew what Jane-5 had said!"

"In that last call, Madarian said there was a witness."

Bogert said, "I know; I've been thinking about that. Don't you suppose I've been in touch with Flagstaff? Nobody in the entire place heard Jane say anything that was out of the ordinary, anything that sounded like an answer to the habitable-planet problem, and certainly anyone there should have recognized the answer if it came—or at least recognized it as a possible answer."

"Could Madarian have been lying? Or crazy? Could he have been trying to protect himself—"

"You mean he may have been trying to save his reputation by pretending he had the answer, then gimmick Jane so she couldn't talk and say, 'Oh, sorry, something happened accidentally. Oh, darn!' I won't accept that for a minute. You might as well suppose he had arranged the meteorite."

"Then what do we do?"

Bogert said, heavily, "Turn back to Flagstaff. The answer *must* be there. I've got to dig deeper, that's all. I'm going there

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and I'm taking a couple of the men in Madarian's department. We've got to go through that place from top to bottom and end to end."

"But, you know, even if there were a witness and he had heard, what good would it do, now that we don't have Jane to explain the process?"

"Every little something is useful. Jane gave the names of the stars; the catalogue numbers probably—none of the named stars has a chance. If someone can remember her saying that and actually remember the catalogue number, or have heard it clearly enough to allow it to be recovered by psycho-probe if he lacked the conscious memory—then we'll have something. Given the results at the end, and the data fed Jane at the beginning, we might be able to reconstruct the line of reasoning; we might recover the intuition. If that is done, we've saved the game—"

Bogert was back after three days, silent and thoroughly depressed. When Robertson inquired anxiously as to results, he shook his head. "Nothing!"

"Nothing?"

"Absolutely nothing. I spoke with every man in Flagstaff—every scientist, every technician, every student—who had had anything to do with Jane, everyone who had as much as seen her. The number wasn't great; I'll give Madarian credit for that much discretion. He only allowed those to see her who might conceivably have had planetological knowledge to feed her. There were twenty-three men altogether who had seen Jane, and of those, only twelve had spoken to her more than casually.

"I went over and over all that Jane had said. They remembered everything quite well. They're keen men engaged in a crucial experiment involving their specialty, so they had every motivation to remember. And they were dealing with a talking robot, something that was startling enough, and one that talked like a TV actress. They couldn't forget."

Robertson said, "Maybe a psycho-probe—"

"If one of them had the vaguest thought that something had happened, I would screw out his consent to probing. But there's nothing to leave room for an excuse and to probe two dozen men who make their living from their brains can't be done. Honestly, it wouldn't help. If Jane had mentioned three stars and said they had habitable planets, it would have been like setting up skyrockets in their brains. How could anyone of them forget?"

"Then maybe one of them is lying," said Robertson, grimly. "He wants the information for his

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own use; to get the credit himself later."

"What good would that do him?" said Bogert. "The whole establishment knows exactly why Madarian and Jane were there in the first place. They know why I came there in the second. If at any time in the future any man now at Flagstaff suddenly comes up with a habitable-planet theory that is startlingly new and different, yet valid, every other man at Flagstaff and every man at U. S. Robots will know at once that he had stolen it. He'd never get away with it."

"Then Madarian himself was somehow mistaken."

"I don't see how I can believe that either. Madarian had an irritating personality—all robopsychologists have irritating personalities, I think, which must be why they work with robots rather than with men—but he was no dummy. He *couldn't* be wrong in something like this."

"Then—" But Robertson had run out of possibilities. They had reached a blank wall and for some minutes each stared at it, disconsolately.

Finally, Robertson stirred. "Peter—"

"Well?"

"Let's ask Susan."

Bogert stiffened. "What!"

"Let's ask Susan. Let's call her and ask her to come in."

"What can she possibly do?"

"I don't know. But she's a robopsychologist, too, and she might understand Madarian better than we do. Besides, she—Oh, hell, she always had more brains than any of us."

"She's nearly eighty."

"And you're seventy. What about it?"

Bogert sighed. Had her abrasive tongue lost any of its rasp in the years of her retirement? He said, "Well, I'll ask her."

Susan Calvin entered Bogert's office with a slow look around, before her eyes fixed themselves on the Research Director. She had aged a great deal since her retirement. Her hair was a fine white and her face seemed to have crumpled. She had grown so frail as to be almost transparent, and only her eyes, piercing and uncompromising, seemed to remain of all that had been.

Bogert strode forward heartily, holding out his hand. "Susan!"

Susan Calvin took it, and said, "You're looking reasonably well, Peter, for an old man. If I were you, I wouldn't wait till next year. Retire now and let the young men get to it.—And Madarian is dead. Are you calling me in to take over my old job? Are you determined to keep the ancients till a year past actual physical death?"

"No, no, Susan. I've called you in—" He stopped. He did not,

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after all, have the faintest idea of how to start.

But Susan read his mind now as easily as she always had. She seated herself with the caution born of stiffened joints and said, "Peter, you've called me in because you're in bad trouble. Otherwise, you'd sooner see me dead than within a mile of you."

"Come, Susan—"

"Don't waste time on pretty talk. I never had time to waste when I was forty and certainly not now. Madarian's death and your call to me are both unusual, so there must be a connection. Two unusual events without a connection is too low-probability to worry about. Begin at the beginning and don't worry about revealing yourself to be a fool. That was revealed to me long ago."

Bogert cleared his throat miserably and began. She listened carefully, her withered hand lifting once in a while to stop him so that she might ask a question.

She snorted at one point. "Feminine intuition? Is that what you wanted the robot for? You men. Faced with a woman reaching a correct conclusion and unable to accept the fact that she is your equal or superior in intelligence, you invent something called 'feminine intuition'."

"Uh, yes, Susan, but let me continue—"

He did. When she was told of Jane's contralto voice, she said, "It is a difficult choice sometimes whether to feel revolted at the male sex or merely to dismiss them as contemptible."

Bogert said, "Well, let me go on—"

When he was quite done, Susan said, "May I have the private use of this office for an hour or two?"

"Yes, but—"

She said, "I want to go over the various records—Jane's programing, Madarian's calls, your interviews at Flagstaff. I presume I I can use that beautiful new shielded laser-phone and your computer outlet if I wish."

"Yes, of course."

"Well, then, get out of here, Peter."

It was not quite forty-five minutes later when she hobbled to the door, opened it, and called for Bogert.

When Bogert came, Robertson was with him. Both entered and Susan greeted the latter with an unenthusiastic, "Hello, Scott."

Bogert tried desperately to gauge the results from Susan's face, but it was only the face of a grim old lady, who had no intention of making anything easy for him.

He said cautiously, "Do you think there's anything you can do, Susan?"

"Beyond what I have already

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done? No! There's nothing more."

Bogert's lips set in chagrin, but Robertson said, "What have you already done, Susan?"

Susan said, "I've thought a little; something I can't seem to persuade anyone else to do. For one thing, I've thought about Madarian. I knew him, you know. He had brains but he was a very irritating extrovert. I thought you would like him after me, Peter."

"It was a change," Bogert couldn't resist saying.

"And he was always running to you with results the very minute he had them, wasn't he?"

"Yes, he was."

"And yet," said Susan, "his last message, the one in which he said Jane had given him the answer, was sent from the plane. Why did he wait so long? Why didn't he call you while he was still at Flagstaff, immediately after Jane had said whatever it was she said?"

"I suppose," said Peter, "that for once he wanted to check it thoroughly and—well, I don't know. It was the most important thing that had ever happened to him; he might for once have wanted to wait and be sure of himself."

"On the contrary; the more important it was, the less he would wait, surely. And if he could manage to wait, why not do it properly and wait till he was back at U. S. Robots so that he could check the results with all the computing equipment this firm could make available to him? In short, he waited too long from one point of view and not long enough from another."

Robertson interrupted. "Then you think he was up to some trickery—"

Susan looked revolted. "Scott, don't try to compete with Peter in making inane remarks. Let me continue—A second point concerns the witness. According to the records of that last call, Madarian said, 'Poor guy jumped two feet when Jane suddenly began to reel out the answer in her beautiful voice.' In fact, it was the last thing he said. And the question is, then, why should the witness have jumped? Madarian had explained that all the men were crazy about that voice, and they had had ten days with the robot—with Jane. Why should the mere act of her speaking have startled them?"

Bogert said, "I assumed it was astonishment at hearing Jane give an answer to a problem that has occupied the minds of planetologists for nearly a century."

"But they were *waiting* for her to give that answer. That was why she was there. Besides, consider the way the sentence is worded. Madarian's statement makes it seem the witness was startled, not astonished, if you see the difference. What's more, that reaction came when Jane sudden-

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ly began'—in other words, at the very start of the statement. To be astonished at the content of what Jane said would have required the witness to have listened a while so that he might absorb it. Madarian would have said he had jumped two feet *after* he had heard Jane say thus-and-so. It would be 'after' not 'when', and the word 'suddenly' would not be included."

Bogert said, uneasily, "I don't think you can refine matters down to the use or non-use of a word."

"I can," said Susan, frostily, "because I am a robopsychologist. And I can expect Madarian to do so, too, because *he* was a robopsychologist. We have to explain those two anomalies, then. The queer delay before Madarian's call and the queer reaction of the witness."

"Can *you* explain them?" asked Robertson.

"Of course," said Susan, "since I use a little simple logic. Madarian called with the news without delay, as he always did, or with as little delay as he could manage. If Jane had solved the problem at Flagstaff, he would certainly have called from Flagstaff. Since he called from the plane, she must clearly have solved the problem after he had left Flagstaff."

"But then—"

"Let me finish. Let me finish. Was Madarian not taken from the airport to Flagstaff in a heavy, enclosed ground-car? And Jane, in her crate, with him?"

"Yes."

"And presumably, Madarian and the crated Jane returned from Flagstaff to the airport in the same heavy, enclosed ground-car. Am I right?"

"Yes, of course!"

"And they were not alone in the ground-car, either. In one of his calls, Madarian said 'we were chauffeured from the port to the main administration building' and I suppose I am right in concluding that if he were chauffeured, then that was because there was a chauffeur, a human driver, in the car."

"Good God!"

"The trouble with you, Peter, is that when you think of a witness to a planetological statement, you think of planetologists. You divide up human beings into categories, and despise and dismiss most. A robot cannot do that. The First Law says 'A robot may not injure a *human being*, or, through inaction, allow a *human being* to come to harm.' *Any* human being. That is the essence of the robotic view of life. A robot makes no distinction. To a robot, all men are truly equal, and to a robopsychologist who must perforce deal with men at the robotic level, all men are truly equal, too.

"It would not occur to Madarian to say a truckdriver had heard the statement. To you a truck-

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driver is not a scientist but is a mere animate adjunct of a truck, but to Madarian he was a man and a witness. Nothing more. Nothing less."

Bogert shook his head in disbelief, "But are you *sure?*"

"Of course, I'm sure. How else can you explain the other point; Madarian's remark about the startling of the witness? Jane was crated, wasn't she? But she was *not* deactivated. According to the records, Madarian was always adamant against ever deactivating an intuitive robot. Moreover, Jane-5, like any of the Janes was extremely non-talkative. Probably, it never occurred to Madarian to order her to remain quiet within the crate; and it was within the crate that the pattern finally fell into place. Naturally she began to talk. A beautiful contralto voice suddenly sounded from inside the crate. If you were the truckdriver, what would you do at that point? Surely you'd be startled. It's a wonder he didn't crash."

"But if the truckdriver was the witness, why didn't he come forward—"

"Why? Can he possibly know that anything crucial had happened, that what he heard was important? Besides, don't you suppose Madarian tipped him well and asked him not to say anything? Would you *want* the news to spread that an activated robot was being transported illegally over the Earth's surface."

"Well, will he remember what was said?"

"Why not. It might seem to you, Peter, that a truckdriver, one step above an ape in your view, can't remember. But truckdrivers can have brains, too. The statements were most remarkable and the driver may well have remembered some. Even if he gets some of the letters and numbers wrong, we're dealing with a finite set, you know, the 5500 stars or star-systems within 80 light-years or so—I haven't looked up the exact number. You can make the correct choices. And if needed, you will have every excuse to use the psycho-probe—"

The two men stared at her. Finally, Bogert, afraid to believe, whispered, "How can you be *sure?*"

For a moment, Susan was on the point of saying: Because I've called Flagstaff, you fool, and because I spoke to the truckdriver, and because he told me what he had heard, and because I've checked with the computer at Flagstaff and got the only three stars that fit the information, and because I have those names in my pocket.

But she didn't. Let him go through it all himself. Carefully, she rose to her feet, and said, sardonically, "How can I be sure? —Call it feminine intuition."

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What happens when Harlan Ellison and Roger Zelazny pool their considerable talents? Something very different but no less exciting than the Sheckley-Ellison collaboration that we published last year ("I See A Man Sitting On A Chair . . ." January 1968). Both stories will be included in the first book of collaborations ever published, PARTNERS IN WONDER, *in which the ubiquitous Mr. Ellison teams up with Asimov, Budrys, Davidson, Delany, Laumer, Sturgeon, Silverberg and others. The book will be published early next year by Avon.*

COME TO ME NOT IN WINTER'S WHITE

by Harlan Ellison and Roger Zelazny

SHE WAS DYING AND HE WAS the richest man in the world, but he couldn't buy her life. So he did the next best thing. He built a house. He built *the* house, different from any other house that had ever been. She was transported to it by ambulance, and their goods and furnishings followed in many vans.

They had been married little over a year; then she had been stricken. The specialists shook their heads and named a new disease after her. They gave her six-months-to-a-year; then they departed, leaving behind them prescriptions and the smell of antiseptics. But he was not defeated. Nothing as commonplace as death could defeat him.

For he was the greatest physicist ever employed by AT&T in the year of Our Lord and President Farrar, nineteen hundred and ninety-eight.

(When one is incalculably wealthy from birth, one feels a sense of one's own personal unworthiness; so having been denied the joys of grueling labor and abject poverty, he had labored over himself. He had made of himself one who was incalculably worthy—the greatest physicist the world had ever known. It was

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enough for him . . . until he had met her. Then he wanted much more.)

He didn't *have* to work for AT&T, but he enjoyed it. They allowed him the use of their immense research facilities to explore his favorite area—Time, and the waning thereof.

He knew more about the nature of Time than any other human being who had ever lived.

It might be said that Carl Manos was Chronos/Ops/Saturn /Father Time himself, for he fitted even the description, with his long, dark beard and his slashing, scythe-like walking stick. He knew Time as no other man had ever known it, and he had the power and the will and the love to exploit it.

How?

Well, there was the house. He'd designed it himself. Had it built in less than six weeks, settling a strike by himself to insure its completion on time.

What was so special about the house?

It had a room; a room like no other room that had ever existed, anywhere.

In this room, Time ignored the laws of Albert Einstein and obeyed those of Carl Manos.

What were those laws and what was this room?

To reverse the order of the questions, the room was the bedroom of his beloved Laura, who had had *Lora Manosism,* an affliction of the central nervous system, named after her. The disease was monstrously degenerative; four months after diagnosis, she would be a basket case. Five months—blind, incapable of speech. Six-months-to-a-year—dead. She dwelled in the bedroom that Time feared to enter. She *lived* there while he worked and fought for her. This was because, for every year that passed outside the room, only a week went by within. Carl had so ordained it, and it cost him eighty-five thousand dollars a week to maintain the equipment that made it so. He would see her live and be cured, no matter what the cost, though his beard changed its appearance with each week that passed for her. He hired specialists, endowed a foundation to work on her cure; and every day, he grew a trifle older. Although she had been ten years his junior, the gap was rapidly widened. Still he worked to slow her room even more.

"Mister Manos, your bill is now two hundred thousand dollars a week."

"I'll pay it," he told the power & light people, and did. It was now down to three days for every year.

And he would enter her room and speak with her.

"Today is July ninth," he said. "When I leave in the morning it

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will be around Christmastime. How do you feel?"

"Short of breath," she replied. "What do the doctors tell you?"

"Nothing, yet," he said. "They're working on your problem, but there's no answer in sight."

"I didn't think so. I don't think there ever will be."

"Don't be fatalistic, love. If there's a problem, there's an answer—and there's plenty of time. All the time in the world . . ."

"Did you bring me a newspaper?"

"Yes. This will keep you caught up. There's been a quick war in Africa, and a new presidential candidate has come on the scene."

"Please love me."

"I do."

"No, I know that. *Make* love to me."

They smiled at her fear of certain words, and then he undressed and made love to her.

Then, after, there came a moment of truth, and he said, "Laura, I have to tell you the way it is. We're nowhere yet, but I have the best neurological minds in the world working on your problem. There's been one other case like yours since I locked you away—that is, since you came to stay here—and he's dead already. But they have learned something from him and they will continue to learn. I've brought you a new medicine."

"Will we spend Christmas together?" she asked.

"If you wish."

"So be it."

And so it was.

He came to her at Christmastime, and together they decorated the tree and opened presents.

"Hell of a Christmas with no snow," she said.

"Such language—and from a lady!"

But he brought her snow and a Yule log and his love.

"I'm awful," she said. "I can't stand myself sometimes. You're doing everything you can and nothing happens, so I harass you. I'm sorry."

She was five feet seven inches in height and had black hair. Black? So black as to be almost blue, and her lips were a pink and very special pair of cold shell-coral things. Her eyes were a kind of dusk where there are no clouds and the day sets off the blue with its going. Her hands shook whenever she gestured, which was seldom.

"Laura," he told her, "even as we sit here, they work. The answer, the cure, will come to pass—in time."

"I know."

"You wonder, though, whether it will be time enough. It will. You're virtually standing still while everything outside races by. Don't worry. Rest easy. I'll bring you back."

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"I know that," she said. "It's just that I sometimes—despair."

"Don't."

"I can't help it."

"I know more about Time than anybody else . . . You've got it: on your side."

He swung his stick like a saber, beheading roses that grew about the wall. "We can take a century," he said, quickly, as though loath to lose even a moment, "without your being harmed. We can wait on the answer that has to come. Sooner or later, there *will* be an answer. If I go away for a few months, it will be as a day to you. Don't worry. I'll see you cured and we'll be together again in a brighter day—for God sake don't worry! You know what they told you about psychosomatic conversions!"

"Yes, I shouldn't have one."

"Then don't. There are even other tricks I will be able to play with Time, as it goes on—such as freezing. You'll come out okay, believe me."

"Yes," she said, raising her glass of Irish Mist. "Merry Christmas."

"Merry Christmas!"

But even for a man who has been thought incalculably wealthy, lack of attention to compounding that wealth, monomaniacal ferocity in pursuing a goal, and a constant, heavy drain, inevitably brings the end in sight. Though the view to that end was a long one, though there were more years that could be put to use, even so it became obvious to everyone around him that Carl Manos had committed himself to a crusade that would end in his destruction. At least financially. And for them, that was the worst sort of destruction. For they had not lived in the thoughts of Manos, were unaware that there were other, far more exacting destructions.

He came to her in the early summer, and he brought a recording of zarzuela love duets by de la Cruz, Hidalgo Bréton. They sat beside each other, their hands touching, and they listened to the voices of others who were in love, all through July and August. He only sensed her restlessness as August drew to a close and the recording shusssed into silence.

"What?" he asked, softly.

"It's nothing. Nothing, really."

"Tell me."

She spoke, then, of loneliness.

And condemned herself with more words; for her ingratitude, her thoughtlessness, her lack of patience. He kissed her gently, and told her he would do something about it.

When he left the room, the first chill of September was in that corner of the world. But he set about finding a way to stave off her loneliness. He thought first of himself living in the room, of conducting his experiments in

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the room without Time. But that was unfeasible, for many reasons —most of them dealing with Time. And he needed a great deal of space to conduct the experiments: building additions to the room was impossible. He could see, himself, that there would not be sufficient funds to expand the experiment.

So he did the next best thing.

He had his Foundation scour the world for a suitable companion. After three months they submitted a list of potentials to him. There were two. Only two.

The first was a handsome young man named Thomas Grindell, a bright and witty man who spoke seven languages fluently, had written a perceptive history of mankind, had traveled widely, was outspoken and in every other possible way was the perfect companion.

The second was an unattractive woman named Yolande Loeb. She was equally as qualified as Grindell, had been married and divorced, wrote excellent poetry, and had dedicated her life to various social reforms.

Even Carl Manos was not so deeply immersed in his problem that he could not see the ramifications of possible choice. He discarded the name of Grindell.

To Yolande Loeb he offered the twin lures of extended life and financial compensation sufficient to carry her without worry through three lifetimes. The woman accepted.

Carl Manos took her to the room, and before the door was keyed open from the control console, he said, "I want her to be happy. To be kept occupied. No matter what she wants, she's to have it. That is all I ask of you."

"I'll do my best, Mr. Manos."

"She's a wonderful person, I'm sure you'll love her."

"I'm sure."

He opened the outer chamber, and they entered. When they had neutralized temporally, the inner chamber was opened, and he entered with the woman.

"Hello."

Laura's eyes widened when she saw her, but when Carl had told her Miss Loeb had come to keep her company, to be the friend Laura had needed, she smiled and kissed his hand.

"Laura and I will have so much time to get acquainted," Yolande Loeb said, "why don't you spend this time together?" And she took herself to the far corner of the room, to the bookshelf, and pulled down a Dickens to re-read.

Laura drew Carl Manos down to her and kissed him. "You are so very good to me."

"Because I love you. It's that simple. I wish *everything* was that simple."

"How is it coming?"

"Slowly. But coming."

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She was concerned about him. "You look so tired, Carl."

"Weary, not tired. There's a big difference."

"You've grown older."

"I think the gray in my beard is very distinguished."

She laughed lightly at that, but he was glad he had brought Miss Loeb, and not Grindell. Thrown together in a room where Time nearly stood still, for endless months that would not be months to them, who knew what could happen? Laura was an extraordinarily beautiful woman. *Any* man would find himself falling in love with her. But with Miss Loeb as companion—well, it was safe now.

"I have to get back. We're trying some new catalysts today. Or rather, however many days ago it was when I came in here. Take care, darling. I'll be back as soon as I can."

Laura nodded understanding. "Now that I have a friend, it won't be so lonely till you return, dearest."

"Would you like me to bring anything special next time?"

"The sandalwood incense?"

"Of course."

"Now I won't be lonely," she repeated.

"No. I hope not. Thank you."

Anl he left them together.

"Do you know Neruda?" Miss Loeb asked.

"Pardon me?"

"The Chilean poet? *The Heights of Macchu Picchu*? One of his greatest works?"

"No, I'm afraid that I don't."

"I have it with me. It is a piece of blazing power. There is a certain strength within it, which I thought you—"

". . . Might take heart from while contemplating death. No. Thank you, but no. It was bad enough, just thinking about all the things the few people I *have* read have said about life's ending. I am a coward, and I know that one day I will die, as everyone must. Only, in my condition, I have a schedule. *This* happens, then *this* happens, and then it is all over. The only thing between me and death is my husband."

"Mr. Manos is a fine man. He loves you very much."

"Thank you. Yes, I know. So if you wish to console me concerning this, then I am not especially interested."

But Yolande Loeb pursed her lips, touched Laura's shoulder, said, "No. Not consolation. Not at all.

"Courage or faith, perhaps," she said, "but not consolation or resignation," and, " 'Irresistable death invited me many times: / It was like salt occulted in the waves / and what its invisible fragrance suggested / was fragments of wrecks and heights / or vast structures of wind and snowdrift.' "

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"What is that?"

"The beginning of Section Four."

Laura dropped her eyes, then said, "Tell me the whole story."

" 'From air to air, like an empty net,' " said Yolande, in her deep, impressive tones, and with a slight accent, " 'dredging through streets and ambient atmosphere, I came / lavish, at autumn's coronation . . .' "

Laura listened, and some variety of truth seemed to be present there.

After a time she reached out and their fingertips touched, gently.

Yolande told her of her girlhood in a *kibbutz,* and of her broken marriage. She told her of her life after that thing, and of the suffering attendant thereto.

Laura cried, hearing of this misery.

She felt badly for days thereafter.

Yet these were not days to Carl Manos, who also had cause to feel badly. He met a girl whose company he enjoyed, until she said that she loved him. He dropped her like poison sumac and hot potatoes. After all, Time —their friend/their enemy— had a deal going with Laura and Carl. There was no room for intruders in this fated threesome.

He cursed, paid his bills, and figured ways to make Time even more amenable to his bidding.

But suddenly he was in pain. He knew nothing of Pablo Neruda, or this Pasternak, Lorca, Yevtushenko, Alan Dugan, Yeats, Brooke, Daniels—any of them—and Laura spoke of them constantly these days. As he had no replies for this sort of thing, he just nodded. He kept on nodding. Time after time . . .

"You're happy with the present arrangement?" he finally asked.

"Oh, yes! Of course," she replied. "Yolande is wonderful. I'm so glad that you invited her."

"Good. That's something, anyway."

"What do you mean—?"

"Yolande!" he called out, suddenly. "How are you?"

Yolande Loeb emerged from the screened-off section of the apartment to which she discreetly retired during his visits. She nodded to him and smiled faintly.

"I am quite well, Mr. Manos. Thank you. And yourself?" There was a brief catch in her voice as she moved toward him, and realizing that her eyes were fixed on his beard, he chuckled within it, saying, "I'm beginning to feel a trifle like a premature patriarch." She smiled, and his tone was light, but he felt pain, again.

"I've brought you some presents," he went on, placing sealtite packages on the table. "The latest art books and tapes, recordings, some excellent film beads, poems

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which have been judged by the critics to be exceptional."

Both women moved to the table and began running their fingertips down the sealstrips, opening the parcels, thanking him for each item as it was unwrapped, making little noises of pleasure and excitement. As he studied Yolande's swart face, with its upturned nose, numerous moles, small scar upon the brow, and as his eyes moved on to Laura's face, flushed now and smiling—as he stood there, both hands upon his walking-stick, reflecting that it was good to have chosen as he had—something twisted softly within him and he knew pain once more.

At first, he was unable to analyze the feelings. Always, however, they returned to him as accompaniment to his recollection of that tableau: the two of them moving about the package-laden table, leafing through the foil-pages of the books, holding the recording cassettes at arm's length, the better to study their dimensional-covers, chatting about their new treasures, excluding him.

It was a feeling of separation, resulting in a small loneliness, as well as something else. The two women had a thing in common, a thing which did not exist between Laura and himself. They shared a love for the arts—an area of existence for which he could allow himself little time. And, too, they were together in a war zone—alone in the room with the opponent Time laying siege. It had brought them closer together, sharing the experience of defying death and age. They had this meeting place where he was now a stranger. It was . . .

Jealousy, he decided suddenly; and was quite surprised by the notion. He was jealous of that which they had come to share. He was shocked at the thought, confused. But then, impressed as he always had been with a sense of personal unworthiness, he recognized it as another evidence of this condition. He studiedly sought to banish the feeling.

But then, there had never been another Laura, or another *ménage* such as this.

Was it guilt that came now in response?

He was not certain.

He coded a fresh cup of coffee, and when it arrived, smiled into the eyes—his own, perhaps—which regarded him through the steam and darkness of its surface. His knowledge of the ancients stopped short with their legends and theories of Time. Chronos, or Time, had been castrated by his son, Zeus. By this—it had been contended—the priests and oracles meant to convey the notion that Time is incapable of bringing forth any

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new thing, but must ever repeat himself and be satisfied with variations of that which has already been begotten. And that is why he smiled . . .

Was not Laura's disease a new thing come into the world? And was not his mastery of Time now to be the cause of another new thing—its remedy?

Guilt and jealousy alike forgotten, he sipped his coffee, tapping his fingers to the beat of an unheard tune—as the particles and antiparticles danced before him in their chambers—and thus time was kept.

And when, later that evening, the viewer chimed, that evening as he sat there, white-smocked, before the Tachytron, archaic glasses pushed up onto his forehead, cold cup of coffee before him on the console, as he sat looking inside himself, he put aside remembered guilt for a premonition.

The viewer chimed again.

That would be one of the doctors . . . and it was . . .

The results of his latest experiments—rainbow journeys where no physicist had ever gone before—had been integrated with the work the doctors had been doing, and his premonition became a hallelujah reality.

He went to tell Laura they had won; went to the room outside which Time lay siege with growing frustration; went to restore the full measure of his love.

Where he found them, making love.

Alone, outside the room where Time now waited smugly, finally savoring the taste of victory, Carl Manos lived more lifetimes than *any* special room could hoard. There had been no scene, save in the tortured silences. There had been no words, save in the linear impressions of three who were surrounded by all that had happened in that room, locked invisibly in the walls.

They wanted to stay together, of course. He had not needed to ask that. Alone together in the timeless room where they had found love, the room Carl Manos could never again enter. He still loved her, that could never be changed. And so, he had only two choices.

He could work for the rest of his unworthy life, to pay for the power to keep the room functioning. Or he could turn it off. To turn it off he would have to wait. Wait for Time the Victor to turn his all-consuming love into a kind of hate that would compell him to stop the room's functions.

He did neither. Having only two choices, he took a third course, a choice he did not have, had never had.

He moved to the console and did what had to be done, to *speed up* Time in the room. Even Time

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would die in that room, now. Then, unworthy, he went away.

Yolande sat reading. Neruda, again. How she always came back to him!

On the bed, what had been Laura lay decomposing. Time, unaware that all, including himself, would be victims, had caught up, had won victory finally.

" 'Come, diminutive life,' " she read, " 'between the wings / of the earth, while you, cold, crystal in the hammered air, / thrusting embattled emeralds apart, / O savage waters, fall from the hems of snow.' "

Love, love, until the night collapses
from the singing Andes flint down to the dawn's red knees,
come out and contemplate the snow's blind son.

She laid the book in her lap, then sat back in the chair, eyes closed. And for her, the years passed swiftly.

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Robert Bloch—author of PSYCHO, *author of many fantasy and sf short stories, including the award-winning "That Hellbound Train" (F&SF, September 1958)—here offers a fantasy with a Hollywood background, about a day on the set when the borderline between reel life and real life briefly dims and fades out.*

THE MOVIE PEOPLE

by Robert Bloch

TWO THOUSAND STARS.

Two thousand stars, maybe more, set in the sidewalks along Hollywood Boulevard, each metal slab inscribed with the name of someone in the movie industry. They go way back, those names; from Broncho Billy Anderson to Adolph Zukor, everybody's there.

Everybody but Jimmy Rogers.

You won't find Jimmy's name because he wasn't a star, not even a bit-player—just an extra.

"But I deserve it," he told me. "I'm entitled, if anybody is. Started out here in 1920 when I was just a punk kid. You look close, you'll spot me in the crowd shots in *The Mark of Zorro.* Been in over 450 pictures since, and still going strong. Ain't many left who can beat that record. You'd think it would entitle a fella to something."

Maybe it did, but there was no star for Jimmy Rogers, and that bit about still going strong was just a crock. Nowadays Jimmy was lucky if he got a casting-call once or twice a year; there just isn't any spot for an old-timer with a white muff except in a western barroom scene.

Most of the time Jimmy just strolled the Boulevard; a tall, soldierly erect incongruity in the crowd of tourists, fags and freak-outs. His home address was on Las Palmas, somewhere south of Sunset. I'd never been there but I could guess what it was—one of those old frame bungalow-court sweatboxes put up about the time he crashed the movies and still

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standing somehow by the grace of God and the disgrace of the housing authorities. That's the sort of place Jimmy stayed at, but he didn't really *live* there.

Jimmy Rogers lived at the Silent Movie.

The Silent Movie is over on Fairfax, and it's the only place in town where you can still go and see *The Mark of Zorro.* There's always a Chaplin comedy, and usually Laurel and Hardy, along with a serial starring Pearl White, Elmo Lincoln, or Houdini. And the features are great—early Griffith and DeMille, Barrymore in *Dr. Jekyll and Mr. Hyde,* Lon Chaney in *The Hunchback of Notre Dame,* Valentino in *Blood and Sand,* and a hundred more.

The bill changes every Wednesday, and every Wednesday night Jimmy Rogers was there, plunking down his ninety cents at the box-office to watch *The Black Pirate* or *Son of the Sheik* or *Orphans of the Storm.*

To live again.

Because Jimmy didn't go there to see Doug and Mary or Rudy or Clara or Gloria or the Gish sisters. He went there to see himself, in the crowd shots.

At least that's the way I figured it, the first time I met him. They were playing *The Phantom of the Opera* that night, and afterwards I spent the intermission with a cigarette outside the theatre, studying the display of stills.

If you asked me under oath, I couldn't tell you how our conversation started, but that's where I first heard Jimmy's routine about the 450 pictures and still going strong.

"Did you see me in there tonight?" he asked.

I stared at him and shook my head; even with the shabby hand-me-down suit and the white beard, Jimmy Rogers wasn't the kind you'd spot in an audience.

"Guess it was too dark for me to notice," I said.

"But there were torches," Jimmy told me. "I carried one."

Then I got the message. He was in the picture.

Jimmy smiled and shrugged. "Hell, I keep forgetting. You wouldn't recognize me. We did *The Phantom* way back in '25. I looked so young they slapped a mustache on me in Make-up, and a black wig. Hard to spot me in the catacombs scenes—all long shots. But there at the end, where Chaney is holding back the mob, I show up pretty good in the background, just left of Charley Zimmer. He's the one shaking his fist. I'm waving my torch. Had a lot of trouble with that picture, but we did this shot in one take."

In weeks to come I saw more of Jimmy Rogers. Sometimes he was up there on the screen, though truth to tell, I never did recognize him; he was a young man in those films of the Twenties, and his ap-

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pearances were limited to a flickering flash, a blurred face glimpsed in a crowd.

But always Jimmy was in the audience, even though he hadn't played in the picture. And one night I found out why.

Again it was intermission time and we were standing outside. By now Jimmy had gotten into the habit of talking to me and tonight we'd been seated together during the showing of *The Covered Wagon*.

We stood outside and Jimmy blinked at me. "Wasn't she beautiful?" he asked. "They don't look like that any more."

I nodded. "Lois Wilson? Very attractive."

"I'm talking about June."

I stared at Jimmy and then I realized he wasn't blinking. He was crying.

"June Logan. My girl. This was her first bit, the Indian attack scene. Must have been seventeen —I didn't know her then; it was two years later we met over at First National. But you must have noticed her. She was the one with the long blonde curls."

"Oh, *that* one." I nodded again. "You're right. She was lovely."

And I was a liar, because I didn't remember seeing her at all, but I wanted to make the old man feel good.

"Junie's in a lot of the pictures they show here. And from '25 on, we played in a flock of 'em together. For a while we talked about getting hitched, but she started working her way up, doing bits—maids and such—and I never broke out of extra work. Both of us had been in the business long enough to know it was no go, not when one of you stays small and the other is headed for a big career."

Jimmy managed a grin as he wiped his eyes with something which might once have been a handkerchief. "You think I'm kidding, don't you? About the career, I mean. But she was going great, she would have been playing second leads pretty soon."

"What happened?" I asked.

The grin dissolved and the blinking returned. "Sound killed her."

"She didn't have a voice for talkies?"

Jimmy shook his head. "She had a great voice. I told you she was all set for second leads—by 1930 she'd been in a dozen talkies. Then sound killed her."

I'd heard the expression a thousand times, but never like this. Because the way Jimmy told the story, that's exactly what had happened. June Logan, his girl Junie, was on the set during the shooting of one of those early *All Talking-All Singing-All Dancing* epics. The director and camera crew, seeking to break away from the tyranny of the stationary microphone, rigged up one of the first

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traveling mikes on a boom. Such items weren't standard equipment yet, and this was an experiment. Somehow, during a take, it broke loose and the boom crashed, crushing June Logan's skull.

It never made the papers, not even the trades; the studio hushed it up, and June Logan had a quiet funeral.

"Damn near forty years ago," Jimmy said. "And here I am, crying like it was yesterday. But she was my girl—"

And that was the other reason why Jimmy Rogers went to the Silent Movie. To visit his girl.

"Don't you see?" he told me. "She's still alive up there on the screen, in all those pictures. Just the way she was when we were together. Five years we had, the best years for me."

I could see that. The two of them in love, with each other and with the movies. Because in those days, people *did* love the movies. And to actually be *in* them, even in tiny roles, was the average person's idea of seventh heaven.

Seventh Heaven, that's another film we saw with June Logan playing in a crowd scene. In the following weeks, with Jimmy's help, I got so I could spot his girl. And he'd told the truth—she was a beauty. Once you noticed her, really saw her, you wouldn't forget. Those blonde ringlets, that smile, identified her immediately.

One Wednesday night Jimmy and I were sitting together watching *The Birth of a Nation.* During a street shot, Jimmy nudged my shoulder. "Look, there's June."

I peered up at the screen, then shook my head. "I don't see her."

"Wait a second—there she is again. See, off to the left, behind Walthall's shoulder?"

There was a blurred image and then the camera followed Henry B. Walthall as he moved away.

I glanced at Jimmy. He was rising from his seat.

"Where you going?"

He just marched outside.

When I followed I found him leaning against the wall under the marquee and breathing hard; his skin was the color of his whiskers.

"Junie," he murmured. "I saw her—"

I took a deep breath. "Listen to me. You told me her first picture was *The Covered Wagon.* That was made in 1923. And Griffith shot *The Birth of a Nation* in 1915."

Jimmy didn't say anything. There was nothing to say. We both knew what we were going to do—march back into the theatre and see the second show.

When the scene screened again, we were watching and waiting. I looked at the screen, then glanced at Jimmy.

"She's gone," he whispered. "She's not in the picture."

"She never was," I told him. "You know that."

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"Yeah." Jimmy got up and drifted out into the night, and I didn't see him again until the following week.

That's when they showed the short feature with Charles Ray—I've forgotten the title, but he played his usual country-boy role, and there was a baseball game in the climax with Ray coming through to win.

The camera panned across the crowd sitting in the bleachers, and I caught a momentary glimpse of a smiling girl with long blonde curls.

"Did you see her?" Jimmy grabbed my arm.

"That girl—"

"It was Junie. She winked at me!"

This time I was the one who got up and walked out. He followed, and I was waiting in front of the theatre, right next to the display poster.

"See for yourself." I nodded at the poster. "This picture was made in 1917." I forced a smile. "You forget, there were thousands of pretty blonde extras in pictures, and most of them wore curls."

He stood there shaking, not listening to me at all, and I put my hand on his shoulder. "Now look here—"

"I *been* looking here," Jimmy said. "Week after week, year after year. And you might as well know the truth. This ain't the first time it's happened. Junie keeps turning up in picture after picture I know she never made. Not just the early ones, before her time, but later, during the Twenties when I knew her, when I knew exactly what she was playing in. Sometimes it's only a quick flash, but I see her—then she's gone again. And the next running, she doesn't come back.

"It got so that for a while I was almost afraid to go see a show—figured I was cracking up. But now you've seen her too—"

I shook my head slowly. "Sorry, Jimmy. I never said that." I glanced at him, then gestured towards my car at the curb. "You look tired. Come on, I'll drive you home."

He looked worse than tired; he looked lost and lonely and infinitely old. But there was a stubborn glint in his eyes, and he stood his ground.

"No, thanks. I'm gonna stick around for the second show."

As I slid behind the wheel, I saw him turn and move into the theatre, into the place where the present becomes the past and the past becomes the present. Up above in the booth they call it a projection-machine, but it's really a time-machine; it can take you back, play tricks with your imagination and your memory. A girl dead forty years comes alive again, and an old man relives his vanished youth—

But I belonged in the real

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world, and that's where I stayed. I didn't go to the Silent Movie the next week or the week following.

And the next time I saw Jimmy was almost a month later, on the set.

They were shooting a western, one of my scripts, and the director wanted some additional dialogue to stretch a sequence. So they called me in, and I drove all the way out to location, at the ranch.

Most of the studios have a ranch spread for western action sequences, and this was one of the oldest; it had been in use since the silent days. What fascinated me was the wooden fort where they were doing the crowd scene—I could swear I remembered it from one of the first Tim McCoy pictures. So after I huddled with the director and scribbled a few extra lines for the principals, I began nosing around behind the fort, just out of curiosity, while they set up for the new shots.

Out front was the usual organized confusion; cast and crew milling around the trailers, extras sprawled on the grass drinking coffee. But here in the back I was all alone, prowling around in musty, log-lined rooms built for use in forgotten features. Hoot Gibson had stood at this bar, and Jack Hoxie had swung from this dance-hall chandelier. Here was a dust-covered table where Fred Thomson sat, and around the corner, in the cutaway bunkhouse—

Around the corner, in the cutaway bunkhouse, Jimmy Rogers sat on the edge of a mildewed mattress and stared up at me, startled, as I moved forward.

"You—?"

Quickly I explained my presence. There was no need for him to explain his; casting had called and given him a day's work here in the crowd shots.

"They been stalling all day, and it's hot out there. I figured maybe I could sneak back here and catch me a little nap in the shade."

"How'd you know where to go?" I asked. "Ever been here before?"

"Sure. Forty years ago in this very bunkhouse. Junie and I, we used to come here during lunch break and—"

He stopped.

"What's wrong?"

Something *was* wrong. On the pan make-up face of it, Jimmy Rogers was the perfect picture of the grizzled western old-timer; buckskin britches, fringed shirt, white whiskers and all. But under the make-up was pallor, and the hands holding the envelope were trembling.

The envelope—

He held it out to me. "Here. Mebbe you better read this."

The envelope was unsealed, unstamped, unaddressed. It contained four folded pages covered with fine handwriting. I removed them slowly. Jimmy stared at me.

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"Found it lying here on the mattress when I came in," he murmured. "Just waiting for me."

"But what is it? Where'd it come from?"

"Read it and see."

As I started to unfold the pages, the whistle blew. We both knew the signal; the scene was set up, they were ready to roll, principals and extras were wanted out there before the cameras.

Jimmy Rogers stood up and moved off, a tired old man shuffling out into the hot sun. I waved at him, then sat down on the moldering mattress and opened the letter. The handwriting was faded, and there was a thin film of dust on the pages. But I could still read it, every word . . .

"Darling: I've been trying to reach you so long and in so many ways. Of course I've seen you, but it's so dark out there, I can't always be sure, and then too you've changed a lot through the years.

"But I *do* see you, quite often, even though it's only for a moment. And I hope you've seen me, because I always try to wink or make some kind of motion to attract your attention.

"The only thing is, I can't do too much or show myself too long or it would make trouble. That's the big secret—keeping in the background, so the others won't notice me. It wouldn't do to frighten anybody, or even to get anyone wondering why there are more people in the background of a shot than there should be.

"That's something for you to remember, darling, just in case. You're always safe, as long as you stay clear of close-ups. Costume pictures are the best—about all you have to do is wave your arms once in a while and shout, 'On to the Bastille', or something like that. It really doesn't matter except to lip readers, because it's silent, of course.

"Oh, there's a lot to watch out for. Being a dress-extra has its points, but not in ballroom sequences—too much dancing. That goes for parties, too, particularly in a DeMille production where they're 'making whoopee' or one of von Stroheim's orgies. Besides, von Stroheim's scenes are always cut.

"It doesn't hurt to be cut, don't misunderstand about that. It's no different than an ordinary fadeout at the end of a scene, and then you're free to go into another picture. Anything that was ever made, as long as there's still a print available for running somewhere. It's like falling asleep and then having one dream after another. The dreams are the scenes, of course, but while the scenes are playing, they're real.

"I'm not the only one, either. There's no telling how many others do the same thing; maybe hundreds for all I know, but I've rec-

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ognized a few I'm sure of, and I think some of them have recognized me. We never let on to each other that we know, because it wouldn't do to make anybody suspicious.

"Sometimes I think that if we could talk it over, we might come up with a better understanding of just how it happens, and why. But the point is, you *can't* talk, everything is silent; all you do is move your lips, and if you tried to communicate such a difficult thing in pantomime, you'd surely attract attention.

"I guess the closest I can come to explaining it is to say it's like reincarnation—you can play a thousand roles, take or reject any part you want, as long as you don't make yourself conspicuous or do something that would change the plot.

"Naturally, you get used to certain things. The silence, of course. And if you're in a bad print, there's flickering; sometimes even the air seems grainy, and for a few frames you may be faded or out of focus.

"Which reminds me—another thing to stay away from, the slapstick comedies. Sennett's early stuff is the worst, but Larry Semon and some of the others are just as bad; all that speeded-up camera action makes you dizzy.

"Once you can learn to adjust, it's all right, even when you're looking off the screen into the audience. At first the darkness is a little frightening—you have to remind yourself it's only a theatre and there are just people out there, ordinary people watching a show. They don't know you can see them. They don't know that as long as your scene runs, you're just as real as they are, only in a different way. You walk, run, smile, frown, drink, eat—

"That's another thing to remember, about the eating. Stay out of those Poverty Row quickies where everything is cheap and faked. Go where there's real set-dressing, big productions with banquet scenes and real food. If you work fast, you can grab enough in a few minutes, while you're off-camera, to last you.

"The big rule is, always be careful. Don't get caught. There's so little time, and you seldom get an opportunity to do anything on your own, even in a long sequence. It's taken me forever to get this chance to write you—I've planned it for so long, my darling, but it just wasn't possible until now.

"This scene is playing outside the fort, but there's quite a large crowd of settlers and wagon-train people, and I had a chance to slip away inside here to the rooms in back—they're on camera in the background all during the action. I found this stationery and a pen, and I'm scribbling just as fast as I can. Hope you can read it. That is, if you ever get the the chance!

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"Naturally, I can't mail it—but I have a funny hunch. You see, I noticed that standing set back here, the bunkhouse, where you and I used to come in the old days. I'm going to leave this letter under the mattress, and pray.

"Yes, darling, I pray. Someone or something *knows* about us, and about how we feel. How we felt about being in the movies. That's why I'm here, I'm sure of that; because I've always loved pictures so. Someone who knows *that* must also know how I loved you. And still do.

"I think there must be many heavens and many hells, each of us making his own, and—"

The letter broke off there.

No signature, but of course I didn't need one. And it wouldn't have proved anything. A lonely old man, nursing his love for forty years, keeping her alive inside himself somewhere until she broke out in the form of a visual hallucination up there on the screen—such a man could conceivably go all the way into a schizoid split, even to the point where he could imitate a woman's handwriting as he set down the rationalization of his obsession.

I started to fold the letter, then dropped it on the mattress as the shrill scream of an ambulance siren startled me into sudden movement.

Even as I ran out the doorway, I seemed to know what I'd find; the crowd huddling around the figure sprawled in the dust under the hot sun. Old men tire easily in such heat, and once the heart goes —

Jimmy Rogers looked very much as though he were smiling in his sleep as they lifted him into the ambulance. And I was glad of that; at least he'd died with his illusions intact.

"Just keeled over during the scene—one minute he was standing there, and the next—"

They were still chattering and gabbling when I walked away, walked back behind the fort and into the bunkhouse.

The letter was gone.

I'd dropped it on the mattress, and it was gone. That's all I can say about it. Maybe somebody else happened by while I was out front, watching them take Jimmy away. Maybe a gust of wind carried it through the doorway, blew it across the desert in a hot Santa Ana gust. Maybe there *was* no letter. You can take your choice—all I can do is state the facts.

And there aren't very many more facts to state.

I didn't go to Jimmy Rogers' funeral, if indeed he had one. I don't even know where he was buried; probably the Motion Picture Fund took care of him. Whatever *those* facts may be, they aren't important.

For a few days I wasn't too in-

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terested in facts. I was trying to answer a few abstract questions about metaphysics—reincarnation, heaven and hell, the difference between real life and reel life. I kept thinking about those images you see up there on the screen in those old movies; images of actual people indulging in make-believe. But even after they die, the make-believe goes on, and that's a form of reality too. I mean, where's the border line? And if there *is* a border line—is it possible to cross over? *Life's but a walking shadow—*

Shakespeare said that, but I wasn't sure what he meant.

I'm still not sure, but there's just one more fact I must state.

The other night, for the first time since Jimmy Rogers died, I went back to the Silent Movie.

They were playing *Intolerance,* one of Griffith's greatest. Way back in 1916 he built the biggest set ever shown on the screen—the huge temple in the Babylonian sequence.

One shot never fails to impress me, and it did so now; a wide angle on the towering temple, with thousands of people moving ant-like amidst the gigantic carvings and colossal statues. In the distance, beyond the steps guarded by rows of stone elephants, looms a mighty wall, its top covered with tiny figures. You really have to look closely to make them out. But I did look closely, and this time I can swear to what I saw.

One of the extras, way up there on the wall in the background, was a smiling girl with long blonde curls. And standing right beside her, one arm around her shoulder, was a tall old man with white whiskers. I wouldn't have noticed either of them, except for one thing.

They were waving at me . . .

ABOUT THE 2ND COVER

Thanks to the magnificent achievement of the Apollo 11 astronauts, Chesley Bonestell's fine Moonscape is no longer science fiction. The original painting was a gift to the publisher of F&SF, and it was received some time ago with the following description: "Russian astronauts have arrived on the rim of Copernicus only to discover that the Americans have already been there, and one has even carved his name on a rock—an old American custom." We're glad to be able to share it with our readers in this 20th anniversary issue.

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Bradbury fans will be pleased to know that a new collection of his short stories, I SING THE BODY ELECTRIC! *is scheduled for publication this Fall by Alfred A. Knopf. This story—about a land that has been deserted by its people, who have gone South and never returned, like forgetful birds—will be included in the collection, but this is its first appearance anywhere.*

A FINAL SCEPTRE, A LASTING CROWN

by Ray Bradbury

"THERE HE IS!"

The two men leaned. The helicopter tilted with their lean. The coastline whipped by below.

"No. Just a bit of rock and some moss—"

The pilot lifted his head, which signaled the lift of the helicopter to swivel and rush away. The white cliffs of Dover vanished. They broke over green meadows and so wove back and forth, a giant dragonfly excursioning the stuffs of winter that sleeted their blades.

"Wait! There! Drop!"

The machine fell down; the grass came up. The second man, grunting, pushed the bubble-eye aside and, as if he needed oiling, carefully let himself to the earth. He ran. Losing his breath instantly, he slowed to cry out bleakly against the wind:

"Harry!"

His yell caused a ragged shape

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on the rise ahead to stumble up and run.

"I've done nothing!"

"It's not the law, Harry! It's me! Sam Welles!"

The old man who fled before him slowed, then stopped, rigid, on the edge of the cliff above the sea, holding to his long beard with two gloved hands.

Samuel Welles, gasping, trudged up behind, but did not touch, for fear of putting him to flight.

"Harry, you damn fool. It's been weeks. I was afraid I might not find you."

"And I was afraid you *would*."

Harry, whose eyes had been tight shut, now opened them to look tremblingly down at his beard, his gloves, and over at his friend Samuel. Here they were, two old men, very grey, very cold, on a rise of raw stone on a December day. They had known each other so long, so many years, they had passed each other's expressions back and forth between their faces. Their mouths and eyes, therefore, were similar. They might have been ancient brothers. The only difference showed in the man who had unhinged himself from the helicopter. Under his dark clothes you could spy an incongruous Hawaiian-colored sport shirt. Harry tried not to stare at it.

Right now, anyway, both their eyes were wet.

"Harry, I came to warn you."

"No need. Why do you think I've been hiding. This is the final day?"

"The final, yes."

They stood and thought on it.

Christmas tomorrow. And now this Christmas Eve afternoon the last boats leaving. And England, a stone in a sea of mist and water, would be a marble monument to herself left written on by rain and buried in fog. After today, only the gulls would own the island. And a billion monarch butterflies in June rising up like celebrations tossed on parades to the sea.

Harry, his eyes fixed to the tidal shore, spoke:

"By sunset, will every damn stupid idiot fool clear off the Isle?"

"That's about the shape of it."

"And a dread shape it is. And you, Samuel, have you come to kidnap me?"

"Persuade is more like it."

"Persuade? Great God, Sam, don't you know me after fifty years? Couldn't you guess I would want to be the last man in all Britain, no, that hasn't the proper sound, *Great* Britain?"

Last man in Great Britain, thought Harry, Lord, listen. It tolls. It is the great bell of London heard through all the mizzles down through time to this strange day and hour when the last, the very last save one, leave this racial mound, this burial touch of green

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set in a sea of cold light. The last. The last.

"Samuel, listen. My grave is dug. I'd hate to leave it behind."

"Who'll put you *in* it?"

"Me, when the time's right."

"And who's to cover over?"

"Why, there's dust to cover dust, Sam. The wind will see to it. Ah, God!" Not wishing it, the words exploded from his mouth. He was amazed to see tears flung out on the air from his blinking eyes. "What are we doing here? Why all the good-byes? Why are the last boats in the Channel and the last jets gone? Where did people go, Sam? What happened, what *happened!*"

"Why," said Samuel Welles quietly, "it's simple, Harry. The weather here is bad. Always *has* been. No one dared speak of it, for nothing could be done. But now, England is finished. The future belongs—"

Their eyes moved jointly south.

"To the damn Canary Isles?"

"Samoa."

"To the Brazilian shores?"

"Don't forget California, Harry."

Both laughed, gently.

"California. All the jokes. That funny place. And yet, aren't there a million English from Sacramento to Los Angeles this noon?"

"And another million in Florida."

"Two million Down Under, the past four years alone."

They nodded at the sums.

"Well, Samuel, man says one thing. The sun says another. So man goes by what his skin tells his blood. And the blood at last says: South. It has been saying it for two thousand years. But we pretended not to hear. A man with his first sunburn is a man in the midst of a new love-affair, know it or not. Finally, he lies out under some great foreign sky and says to the blinding light: Teach me, oh God, gently, teach."

Samuel Welles shook his head with awe. "Keep talking like that and I won't *have* to kidnap you!"

"No, the sun may have taught you, Samuel, but cannot quite teach me. I wish it could. The truth is, 'twill be no fun here alone. Can't I argue you, Sam, to stay on, the old team, you and me, like when we were boys, eh?" He buffed the other's elbow roughly, dearly.

"God, you make me feel I'm deserting King and Country."

"Don't. You desert nothing, for no one's here. Who would have dreamt, when we were kids in 1980, the day would come when a promise of always summer would leak John Bull to the four corners of beyond?"

"I've been cold all my life, Harry. Too many years putting on too many sweaters and not enough coal in the scuttle. Too many years when the sky did not

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show so much as a crack of blue on the first day of June nor a smell of hay in July nor a dry day and winter begun August 1st, year on year. I can't take it any more, Harry, I can't."

"Nor need you. Our race has suffered itself well. You have earned, all of you, you deserve, this long retirement in Jamaica, Port-au-Prince and Pasadena. Give me that hand. Shake hard again! It's a great moment in history. You and me, *we're* living it!"

"So we are, by God."

"Now look here, Sam, when you've gone and settled in Sicily, Sidney, or Navel Orange, California, tell this 'moment' to the news. They might write you in a column. And history books? Well, shouldn't there be half a page for you and me, the last gone and the last stayed behind? Sam, Sam, you're breaking the bones, but shake away, hold tight, this is our last tussle."

They stood off, panting, wet-eyed.

"Harry, now, will you walk me as far as the 'copter?"

"No. I fear the damn contraption. The thought of the sun on this dark day might leap me in and fly me off with you."

"And what harm in that?"

"Harm! Why, Samuel, I must guard our coast from invasion. The Normans, the Vikings, the Saxons. In the coming years I'll walk the entire isle, stand guard from Dover north on round the reefs and back through Folkestone, here again."

"Will Hitler invade, chum?"

"He and his iron ghosts just might."

"And how will you fight him, Harry?"

"Do you think I walk alone? No. Along the way, I may find Caesar on the shore. He loved it, so he left a road or two. Those roads I'll take, and borrow just those ghosts of choice invaders to repel less choice. It's up to me, yes, to commit or uncommit ghosts, choose or not choose out of the whole damn history of the land?"

"It is. It is."

The last man wheeled to the north and then to the west and then to the south.

"And when I've seen all's-well from castle here to lighthouse there, and listened to battles of gunfires in the plunge off Firth, and bagpiped round Scotland with a sour mean pipe, in each New Year's week, Sam, I'll scull back down-Thames and there each December 31st to the end of my life, the night watchman of London, meaning me, yes, me, will make his clock rounds and say out the Bells of the old rhymed churches. Oranges and lemons say the bells of St. Clemens. Bow Bells. St. Marguerites. Pauls. I shall dance rope-ends for

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you, Sam, and hope the cold wind blown south to the warm wind wherever you are stirs some small grey hairs in your sunburnt ears."

"I'll be listening, Harry."

"Listen more! I'll sit in the Houses of Lords and Parliament and debate, losing one hour but to win the next. And say that never before in history did so many owe so much to so few and hear the sirens again from old remembered records and things broadcast before we were born.

"And a few seconds before January 1st I shall climb and lodge with mice in Big Ben as it strikes the changing of the Year.

"And somewhere along the line, no doubt, I shall sit on the Stone of Scone."

"You wouldn't!"

"Wouldn't I? Or the place where it was, anyway, before they mailed it south to Summer's Bay. And hand me some sort of sceptre, a frozen snake perhaps stunned by snow from some December garden. And fit a kind of paste-up crown upon my head. And name me friend to Richard, Henry, outcast kin of Elizabeths I and II. Alone in Westminster's desert with Kipling mum and history underfoot, very old, perhaps mad, mightn't I, ruler and ruled, elect myself king of the misty isles?"

"You might, and who would blame you?"

Samuel Welles bear-hugged him again, then broke and half ran for his waiting machine. Halfway he turned to call back:

"Good God. I just thought. Your name *is* Harry. What a *fine* name for a King!"

"Not bad."

"Forgive me for leaving?!"

"The sun forgives all, Samuel. Go where it wants you."

"But will England forgive?"

"England is where her people are, I stay with old bones. You go with her sweet flesh, Sam, her fair sunburnt skin and blooded body, get!"

"Good-bye."

"God be with you, too—oh, you and that bright yellow sport shirt!"

And the wind snatched between and though both yelled more, neither heard; waved, and Samuel hauled himself into that machine which swarmed the air and floated off like a vast white summer flower.

And the last man left behind in great gasps and sobs cried out to himself:

Harry! Do you hate change? Against progress? You do see, don't you, the reasons for all this? That ships and jets and planes and a promise of weather piped all the folk away? I see, he said, I see. How could they resist when at long last forever August lay just across the sill? Once it became just a half hour, no, five

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minutes, simple seconds away to sun and eternal summer, then dreams and people and machines went South like great birds which, arrived, disremembered how ever to fly North again for mating and so settled nest in gypsy flocks along equatorial sands. Statistics. Two million people manifested over night, it almost seemed, in South America. Five million strewn through Africa's hot grass. Ten million landed fresh from Cape Kennedy to Taos to Santa Barbara. Ten million, give or take a million, in Australia, Madagascar and through the Tasman Sea. What an absolute earthquake of weather and ninety thousand high-flying cheap-fare machines had shaken and tempted men to loose their old holds, to sift them in golden grains toward desert oases to live on the cheap forever!

Yes, yes! He wept and ground his teeth and leaned up from the cliff rim to shake his fists at the vanishing craft in the sky.

"Traitors! Come back!"

You can't leave old England, can't leave Pip and Humbug, Iron Duke and Trafalgar, the Horse Guard in the rain, London burning, buzz-bombs and sirens, the new babe held high on the palace balcony, Churchill's funeral cortege still in the street, man, *still* in the street! and Caesar not gone to his Senate, and strange happenings this night at Stonehenge! leave all this, this, *this*!?

Upon his knees, at the cliff's edge, the last and final king of England, Harry Smith wept alone.

The helicopter was gone now, called toward August isles where summer sang its sweetness in the birds.

The old man turned to see the countryside and thought, why this is how it was one hundred thousand years ago. A great silence and a great wilderness and now, quite late, the empty shell towns and King Henry, Old Harry, the Ninth.

He rummaged half blindly about in the grass and found his lost book-bag and chocolate bits in a sack and hoisted his Bible, and Shakespeare and much-thumbed Johnson and much-tongued Dickens and Dryden and Pope, and stood out on the road that led all round England.

Tomorrow: Christmas. He wished the world well. Its people had gifted themselves already with sun, all over the globe. Sweden lay empty. Norway had flown. None lived any longer in God's cold climes. All basked upon the continental hearths of His best lands in fair winds under mild skies. No more fights just to survive. Men, reborn like Christ on such as tomorrow, in southern places, were truly returned to an eternal and fresh-grown manger.

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Tonight, in some church, he would ask forgiveness for calling them traitors.

"One last thing, Harry. Blue."

"Blue?" he asked himself.

"Somewhere down the road find some blue chalk. Didn't Englishmen once color themselves with such?"

"Blue men, yes, from head to foot!"

"Our ends are in our beginnings, eh?"

He pulled his cap tight. The wind was cold. He tasted the first snowflakes that fell.

"O remarkable boy!" he said, leaning from an imaginary window on a golden Christmas morn, an old man reborn and gasping for joy. "Delightful boy, there, is the great bird, the turkey, still hung in the poulterer's window?"

"It's hanging there now," said the boy.

"Go buy it! Come back with the man and I'll give you a shilling. Come back in less than five minutes and I'll give you a crown!"

And the boy went to fetch.

And buttoning his coat, carrying his books, Old Harry Ebenezer Scrooge Julius Caesar Pickwick Pip and half a thousand others marched off along the road in winter weather. The road was long and beautiful. The waves were gunfire on the coast. The wind was bagpipes in the North.

Ten minutes later, when he had gone singing beyond a hill, by the look of it, all the lands of England seemed ready for a people who someday soon in history might arrive. . . .

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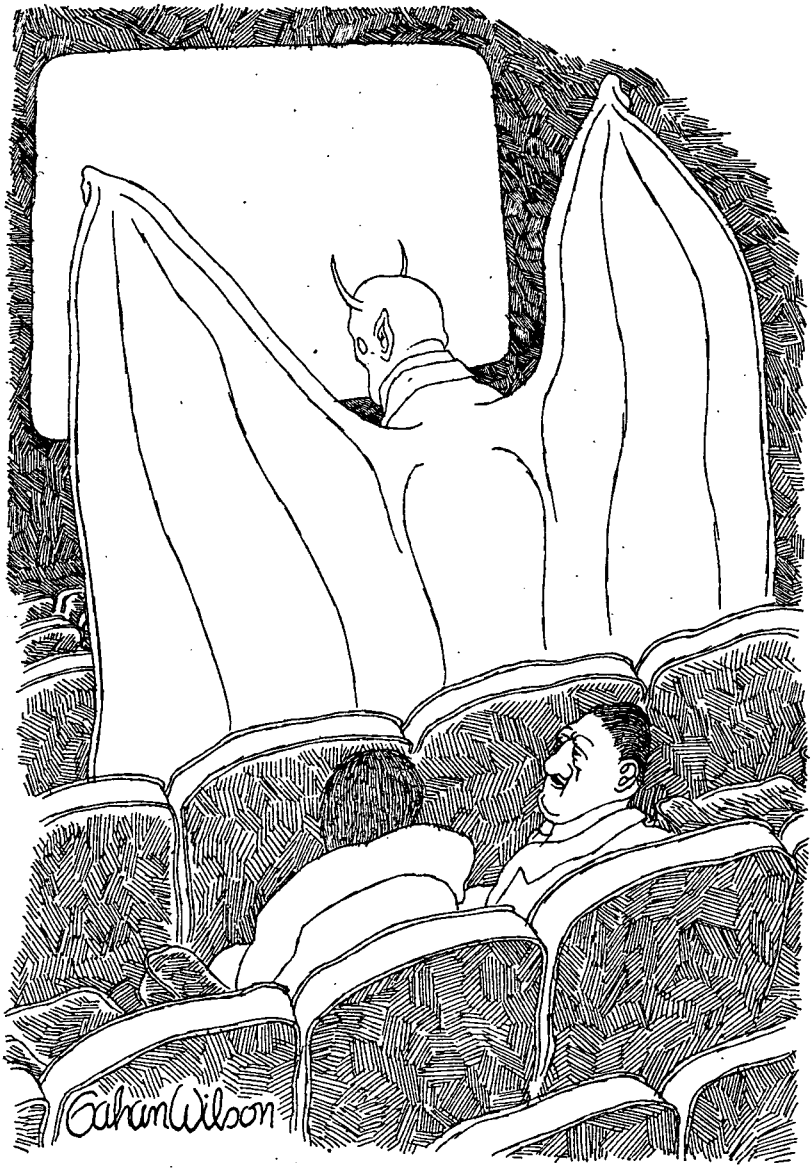

"My usual luck."

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SCIENCE

WORLDS IN CONFUSION

by Isaac Asimov

In my recent book on the Bible*, I naturally had occasion to refer to the plagues that visited Egypt in the time of Moses, as described in the Book of Exodus. In doing so I said:

"Although these plagues, if they had taken place as described in the Bible, must have loomed large in any contemporary records or in later histories, no reference to them is to be found in any source outside the Bible. In 1950, Immanuel Velikovsky, in his book WORLDS IN COLLISION, attempted to account for the plagues (and for some other events described in the Bible) by supposing that the planet Venus had undergone a near collision with the earth. The book created a moderate sensation among the general public for a while, but the reaction of astronomers varied from amusement to anger, and the Velikovskian theory has never, for one moment, been taken seriously either by scientists or by Biblical scholars."

That's all I said, and it seems to me that I spoke gently and without undue heat. Nevertheless, the vials of wrath were opened upon me, and I received a number of letters from ardent Velikovskians denouncing my innocent statement with a great deal of emotional fervor.

Which just goes to bear out my feeling that there is no belief, however foolish, that will not gather its faithful adherents who will defend it to the death.

It isn't even very difficult to see why Velikovskianism should be attractive to certain groups.

Velikovsky uses his theories to try to show that certain of the miracle tales in the Bible (Old Testament only, by the way) are more or

*Asimov's Guide to the Bible; Volume One, the Old Testament (Doubleday, 1968.)

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less true. To be sure, he removes those events from the miraculous by taking away the hand of God and substituting a set of weird natural phenomena instead, but that makes no difference.

Velikovsky's book made the headlines as the work of a "scientist" (which Velikovsky is not). It was ballyhooed as demonstrating that "science" was proving the Bible true—though the amount of real science in the book could be placed in the eye of a needle without making it any more difficult to thread.

Still, to all those who were brought up with traditional beliefs concerning the Bible, it was a great relief that science (the great enemy) had finally "proved" all those miracles, and the book became a best seller.

Secondly, Velikovsky's views tended to make orthodox astronomers look foolish. Imagine those stupid professors not seeing all those things that Velikovsky presented so plainly!

There is always something pleasant about seeing any portion of the "Establishment" come a cropper, and the Scientific Establishment in particular. Scientists, these days, are so influential, so far out of the ordinary clay, so supreme in their self-confidence, and (to put it in a nub) so "smarty-pants" that it is a particular pleasure to see them stub their toes and go flat on their faces.

Those who experience the pleasure most acutely (I suspect) are those scholars who are not, themselves, scientists.

After all, there was a time, one short generation ago, when the humanists were the scholars-par-excellence and the scientists were grubby fellows who worked with their hands and weren't up on Dostoievsky.* Now it is the scientists who hold top rank as scholars, who are most influential, most listened to, most honored, and (heavens!) get showered with government funds.

Naturally, many humanists find themselves attracted to a thesis that makes fools of scientists. And when some astronomers petulantly over-reacted to the attention Velikovsky was getting and wrongheadedly tried to suppress him, the scholars were jubilant. They knew just enough science to cast Velikovsky in the role of a suffering Galileo.

Ever since, sociologists and their like have been lionizing Velikovsky. It's not surprising that the most vehement letter I received was from an English teacher.

I don't want to beat a dead horse, but some of my correspondents

*See BATTLE OF THE EGGHEADS, F & SF, July 1959.

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self-righteously demand that I *read* Velikovsky before I denounce him. The implication is that if I only read him the truth of what he has to say will be borne irresistibly down upon me.

But, as it happens, I *have* read him, and I remain untouched. In fact, I think that if anyone reads WORLDS IN COLLISION and thinks for one moment that there is something to it, he reveals himself to be a scientific illiterate.

This is not to say that some of Velikovsky's "predictions" haven't proved to be so. He predicted Venus would be hotter than astronomers suspected in 1950 and he was right. However, any set of nonsense syllables placed in random order will make words now and then, and if anyone wants to take credit for Velikovsky's lucky hits, they had better try to explain the hundreds of places where he shows himself not only wrong but nonsensical.

Thus, at the very beginning of the book, Velikovsky describes various theories as to the origin of the Solar system and the development of the Earth. He stresses the shortcomings and insufficiencies of these theories, naturally, for he plans to advance a far better one himself. He says, on page 11:*

"According to all existing theories, the angular velocity of the revolution of a satellite must be slower than the velocity of rotation of its parent. But the inner satellite of Mars revolves more rapidly than Mars rotates."

That's a very pretty paragraph but it is quite wrong, and it shows that as an astronomer, Velikovsky may quite possibly be an excellent psychoanalyst.

There is absolutely nothing in any astronomic theory I have ever heard of that relates the angular velocity of a satellite to the period of rotation of the planet it circles. Nothing requires that a satellite revolve about its planet either faster or slower than the planet's period of rotation.

The angular velocity of a satellite depends on two things and *only* two things; the mass of its primary and itself, and the distance between the two bodies. If the primary is much larger than the satellite (as is usually the case), the mass of the satellite can be ignored.

The closer a satellite is to its primary, the more rapidly it moves in its orbit. If it is close enough to its primary, it will revolve about that primary in exactly the same time that the primary rotates, and if it moves still closer, then it will revolve about the primary in less time than it takes the primary to rotate.

If you want to check my quotations, I am using the first edition—Macmillan, 1950—of WORLDS IN COLLISION.

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"The inner satellite of Mars revolves more rapidly than Mars rotates" (to quote Velikovsky again) only because it is close enough to Mars to do so. At the distance of that satellite to Mars, it *can't* revolve any more slowly if Newton's law of gravity is to be obeyed. Far from defying "all existing theories" by revolving so quickly, the inner satellite would defy them if it did *not* revolve so quickly.

Nor is Mars' inner satellite unique. The inner portions of Saturn's rings consist of innumerable tiny satellites, all of which revolve about Saturn faster than Saturn rotates about its axis. What's more, almost every artificial satellite man has launched into space has circled Earth in less time than it takes Earth to rotate on its axis. Earth rotates in 24 hours, and some satellites have made the trip in 1.5 hours.

On page 49, Velikovsky writes:

"Ipuwer, the Egyptian eyewitness of the catastrophe, wrote his lament on papyrus: 'The river is blood,' and this corresponds with the Book of Exodus (7:20): 'All the waters that were in the river turned to blood.' The author of the papyrus also wrote: 'Plague is throughout the land. Blood is everywhere,' and this, too, corresponds with the Book of Exodus (7:21): 'There was blood throughout the land of Egypt.' "

I quote this because in my own book on the Bible I said there was no reference to the plagues of Egypt (which is the "catastrophe" to which Velikovsky here refers) in any source outside the Bible, and one nice lady wrote me a letter in which she was most wroth at my having made that statement. She quoted Ipuwer, too, as an example of an outside source.

Who was Ipuwer? He was the author of a papyrus which has been dated back to the time of the Sixth Dynasty, about 2200 B.C. It was a time when the "Old Kingdom" (which had built the pyramids) was in decay, and when Egyptian society was breaking down into feudalism, confusion, and misery. Ipuwer didn't like the situation and described it very much in the tones with which Tacitus described the decaying Roman society of his time and the New Left describes the decaying American society of our own time.

And what does this have to do with the plagues of Egypt? Assuming the plagues took place at all, they took place at the time of the Exodus; and assuming the Exodus took place at all, it took place in the reign following that of Rameses II—about 1200 B.C.

In other words, Ipuwer's description was written a thousand years before the events Velikovsky claims it was describing. However, Veli-

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kovsky adjusts the dates. He shoves the Exodus backward from 1200 B.C. to 1500 B.C. and Ipuwer he shoves forward from 2200 B.C. to 1500 B.C. In a greater miracle than any in Exodus, he thus brings them together.

Of course, it may be that the Egyptologists are as wrong in their chronology as the astronomers are in their celestial mechanics.

Yet even if we accept Velikovsky's arbitrary dates, what are we to make of Ipuwer's words which go on and on in their wailing? Is it possible, is it just barely possible, that he was making use of metaphor? If I were to say that "Society is going to the dogs" would Velikovsky be justified in supposing that I was speaking of a band of wild dogs who had entered my city and were devouring its inhabitants?

In fact, Velikovsky depends throughout his book on the denial of metaphor. He quotes heavily from myths and legends of all nations, taking every word literally, treating them as though they were architect's blueprints. To be specific, he makes frequent use of passages from LEGENDS OF THE JEWS by Louis Ginzberg. I happen to have read Ginzberg (I wonder how many Velikovskians have?) and it would take a man chemically free of any trace of humor to take those medieval rabbinical tales seriously.

Of course, Velikovsky must be very selective. The entire corpus of humanity's myth and legend yield sentences on every side of every question and sometimes one of them must be hammered a bit to make it fit. Velikovsky talks about Atlantis, for instance, on page 147, saying:

"Critias the younger remembered having been told that the catastrophe which befell Atlantis happened 9,000 years before. There is one zero too many here."

So he removes it. What's a zero? Velikovsky makes the Atlantis catastrophe 900 years before Critias and now it fits his own chronology.

. . . Gentle Readers, place all the myths and legends of the human race at my disposal; give me leave to choose those which I want to use and allow me to make changes where necessary; and I will undertake to prove anything you wish proven.

What Velikovsky is trying to prove is that a great comet was spewed out by Jupiter; that it kept ping-ponging back and forth, side-swiping Earth every once in a while, bringng about all the plagues of Egypt, stopping the Earth in time for Joshua's battle (the one in which he ordered the Sun and Moon to stand still) and so on.

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After the comet was all through playing games, it settled down to become the planet Venus.

The scenes of impossibility this presents are simply colossal in their grandeur. If Venus emerged from Jupiter and passed the near neighborhood of Earth, it must have been in an extremely elongated and comet-like orbit to begin with. (The design of the Solar system and the position of the planets make this necessary.)

For it then to settle down to a nearly circular orbit far, far away from Jupiter—such as it possesses today—cannot possibly be explained by any of the laws of nature worked out by scientists.

Nor does Velikovsky explain it. He simply says it happened. And his evidence? Well, there is his carefully selected list of sentences from myths and legends. And there is also the tale of an analogous event in the heavens. On page 78, he says:

"That a comet, encountering a planet, can become entangled and drawn away from its own path, forced into a new course, and finally liberated from the influence of the planet is proved by the case of Lexell's comet, which in 1767 was captured by Jupiter and its moons. Not until 1779 did it free itself from this entanglement."

Notice Velikovskys' use of words: "entangled" "forced" "free itself" and so on.

I could scarcely blame any innocent who comes upon this passage if he believes that what happened was that Lexell's comet was trapped by Jupiter and his moons; that the comet was bounced from one moon to the next; that it was dribbled off Jupiter; that for twelve years it vainly tried to escape from this "entanglement." Then finally, it broke away. Apparently it lowered its head, charged those nasty moons and plunged through at last.

What *really* happened was that Lexell's comet passed through the Jovian system in May 1767. It passed *through* it and did not linger; it was not entangled. Its orbit was changed as a result of gravitational attraction strictly according to astronomical laws of celestial mechanics. In its new orbit it passed near Jupiter again in the summer of 1779 and again its orbit was changed.

This happens frequently to comets.

Well, then, could the same thing have happened to Earth and Comet-Venus? Not at all! The situation is different!

Jupiter is an immense world, 318 times as massive as Earth. Lexell's Comet is only 1/5000 as massive as Earth, at most. The orbits of Jupiter and its moons were not affected at all by the influence of the tiny comet.

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Comet-Venus, on the other hand, is nearly as massive as Earth. If Comet-Venus passed so close to Earth that its orbit was changed to the present one possessed by Venus, then Earth's orbit would have been changed radically as well—and heaven knows what would have happened to the Moon.

In fact, if Earth's orbit had been such as to give it a climate capable of supporting life before the encounter, it would almost certainly have had a new orbit that would have made it a planet incapable of supporting life after the encounter.

But let's not think of such gigantic catastrophes. Let's not think of altered orbits, of oceans leaving their beds and slopping over the continents. Let's not think of the *great* results of Earth's suddenly stopping its rotation when Joshua commanded the Sun to stand still. (Not only would Joshua's soldiers all have fallen down and rolled for a thousand miles, but the energy of rotation would have been converted into heat and have melted the Earth's crust.)

Instead of all that, I'll just mention one little thing.—There are many limestone caves in the world in which many stalactites and stalagmites have been slowly and precariously forming over a period of hundreds of thousands of years. They are quite brittle.

If the Earth had stopped its rotation at the time of the Exodus, or if it had even slightly changed its period of rotation, every one of those stalactites and stalagmites would have broken.

They did not! They are there! Intact and beautiful, as you will see for yourself if you visit any limestone cave. And those stalactites and stalagmites, standing there mutely, are stronger evidence against Velikovsky's theory, than all Velikovsky's selected lines from myths and legends can possibly counter.

But let us move on. Velikovsky needs a rain of burning fire to explain certain Biblical allusions, and he finds a great deal of talk about such combustive events in his myths.

You and I might suppose that the experience of a volcanic eruption is terrifying enough to account for such tales and can easily be magnified to a whole sky on fire, given the inevitability of poetic license. Velikovsky, however, does not believe in either poetry or metaphor. He wants a literal rain of fire, and he uses Comet-Venus to explain it.

On page 53, he says: "The tails of comets are composed mainly of carbon and hydrogen gases. Lacking oxygen, they do not burn in flight, but the inflammable gases, passing through an atmosphere containing oxygen, will be set on fire."

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These are impressive sentences. The very phrase "carbon and hydrogen gases" takes my breath away. Hydrogen is, indeed, a gas at ordinary cometary temperatures, but carbon is *not*. It is, in fact, among the least gaseous substances known and it takes a temperature of 4200° C. (7500° F.) to make it gaseous.

Now I am a chemist. If Velikovsky wants to say that Laplace's analysis of celestial mechanics is all wrong and that Venus can emerge from Jupiter and settle down in its present orbit, I will smile. If he wants to say that Egyptologists don't know the difference between 1200 B.C. and 2200 B.C., I will grin.

But if he says carbon is a gas, *that's going too far*.

Let's not be too hard, though. As a matter of fact, the tails of comets seem to be made up, at least in part, of molecular fragments, some of which contain both carbon and hydrogen and are therefore "hydrocarbon" in nature. It may be that this is what Velikovsky had in mind when he spoke of "carbon and hydrogen gases."

To be sure, this chemical analysis of comets' tails is the result of some very esoteric and sophisticated astronomical theories, and you might wonder how Velikovsky can come to accept them. After all, if astronomers are so far wrong on the simplest tenets of celestial mechanics, can they be trusted in the delicate nuances of spectroscopy? But then, the astronomical decision with regard to the chemical structure of comets' tails suits Velikovsky's theory, so he accepts it.

(Gentle Reader, give me the chance to pick and choose among the findings of science, accepting this and rejecting that according to my lordly whim, and I will undertake to prove anything you wish proven.)

But granted the hydrocarbons, can cometary tails really blaze up if they pass through Earth's atmosphere? Can they really cause rains of fire? No, sir, not a chance.

Those comet-tails are just about the thinnest gas you can imagine. Some tails have extended outward through space for a hundred million miles, but if all that glowing next-to-nothingness were condensed to the thickness of ordinary gases in our own atmosphere, they would perhaps fill a living room or two.

You know what happens when the Earth passes through a comet's tail?—Nothing!

How do I know? Because the Earth has passed through one on a number of occasions. It passed through the tail of Halley's Comet in 1910. Many people refused to believe the Scientific Establishment, which said nothing would happen. They thought the end of the

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world would come. Or they thought the poisons in the comet's tail (they believed the spectroscopic analysis) would kill all life on Earth.

And what happened?—As I told you, nothing!

Of course, Comet-Venus was much huger than an ordinary comet. The ordinary comet has the mass of a small asteroid. Comet-Venus had 4/5 the mass of the Earth itself. Its "tail" must have been much more voluminous than that of an ordinary comet. Could it be that Comet-Venus's atmosphere *did* ignite on passing through the Earth and *did* set up rains of fire?

And can Venus's atmosphere still be hydrocarbon in nature today? Velikovskians think it is. After Mariner II had made a close approach to Venus in 1962, someone at a news conference made an unfortunate remark that could be interpreted as indicating that Mariner II had indicated the atmosphere of Venus was indeed hydrocarbon.

The misinterpretation was corrected at once and has been corrected with the periodicity of a tolling bell ever since, but it doesn't help. The Velikovskians insist that science has now determined that Venus's atmosphere is hydrocarbon in nature and won't budge from that.

Actually, all the data that has been collected on Venus since Velikovsky's book was published make it seem more and more definite that the planet's atmosphere is about 95 percent carbon dioxide and perhaps 5 percent nitrogen—as non-inflammable a gas mixture as you can imagine.

There are ice crystals in the upper atmosphere making up its clouds, and a very recent suggestion is that there are small quantities of various mercury compounds vaporized by Venus's great heat and floating about in the lower atmosphere. Even so, the atmosphere would remain non-inflammable.

But suppose Comet-Venus's atmosphere *was* hydrocarbon. And suppose it *did* ignite spontaneously in the upper atmosphere and send down rains of fire. And suppose more of the hydrocarbon remained aloft in dank, oily mists, darkening the surface of the Earth.

It is hard to see how such a super-smoggy situation could fail to kill everything on Earth, but never mind. Velikovsky needs it to explain the ninth plague of Egypt (darkness) and bears it out with the usual mishmash of statements drawn out of context from legends, myth, and poetry.

But then what happened to those hydrocarbon clouds? Velikovsky explains that on page 134:

"When the air is overcharged with vapor, dew, rain, hail or snow falls. Most probably the atmosphere discharged its compounds, presumably of carbon and hydrogen, in a similar way."

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That sounds as though the hydrocarbon clouds precipitated in a rain of gasoline, kerosene, and asphalt. Worse and worse!

But then Velikovsky says, "Has any testimony been preserved that during the many years of gloom carbohydrates precipitated?"

Where has the word "carbohydrates" come from? Can it be that Velikovsky doesn't know the difference between "hydrocarbon" and "carbohydrate"? Gasoline is an example of a hydrocarbon material; sugar is an example of a carbohydrate.

Can a cloud of gasoline vapor precipitate as a sugar-like compound? This I'm afraid is chemically impossible.

Can there have been sugar vapor in the clouds in the first place. This, too, I'm afraid is chemically impossible.

But then why does Velikovsky seem to think there will be a precipitation of carbohydrate?

Ah, he has to explain the fall of manna, you see, the miraculous food on which the Israelites lived for forty years in the desert. To achieve the manna, all Velikovsky had to do was to talk of carbon and hydrogen and, at a key-point, quietly slip in that word "carbohydrate." —Presto-chango, alakazam, and there you are.

All you need is an abysmal ignorance of chemistry and you're set.

But that's enough. My space is used up and why go farther? At least fifty more passages can be chosen from the book, but I've proved my point, I think, that Velikovsky's theories are simply silly.

In fact, sooner than have the miracles of the Bible explained by such a farrago of broken-astronomy, half-physics and semi-chemistry, I would accept them exactly as given in the Bible. If I must choose between Immanuel Velikovsky and Cecil B. DeMille, give me DeMille, and quickly.

Coming next month—another anniversary issue!

Since the first issue of F&SF was dated Fall 1949, we feel perfectly free to celebrate our twentieth anniversary in October *and* November. The dates are less important than the number of fine stories that were squeezed out of this issue. On hand next month will be **Howard Fast, Robert Silverberg, Miriam Allen deFord, Ron Goulart** and **Sterling Lanier,** with a new Ffellowes story. You'll want to be on hand also; the November issue is on sale September 30.

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It has been said that as man has moved further into space, sf has turned more to a consideration of man. It's a pretty good generalization; the quantity, quality and inventiveness of sociopsychological sf has reached impressive proportions, and Brian Aldiss's latest story is a brilliant example. It begins with an astonishing mission to Jupiter, but its most vivid extrapolation takes place on this Earth and in the mind of one man.

THE SOFT PREDICAMENT

by Brian W. Aldiss

"Calculate thyself within, seek not thyself in the Moon, but in thine own Orb or Microcosmical Circumference. Let celestial aspects admonish and advise, not conclude and determine thy ways."

Sir Thomas Browne: CHRISTIAN MORALS.

I. JUPITER. With growing familiarity, he saw that the slow writhings were not inconsequential movement but ponderous and deliberate gesture.

Ian Ezard was no longer aware of himself. The panorama entirely absorbed him.

What had been at first a meaningless blur had resolved into an array of lights, gently drifting. The lights now took on pattern, became luminous wings or phosphorescent backbones or incandescent limbs. As they passed, the labored working of those pinions ceased to look random and assumed every appearance of deliberation—of plan—of consciousness! Nor was the stew in which the patterns moved a chaos any longer; as Ezard's senses adjusted to the scene, he became aware of an environment as much governed by its own laws as the environment into which he had been born.

With the decline of his first terror and horror, he could observe more acutely. He saw that the organisms of light moved over and among—what would you call them? Bulwarks? Fortifications? Cloud formations? They were no more clearly defined than sandbanks shrouded in fog, but he was haunted by a feeling of intricate detail slightly beyond his retinal powers of resolution, as if he were gazing at flotillas of

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baroque cathedrals, sunk just too deep below translucent seas.

He thought with unexpected kinship of Lowell, the astronomer, catching imaginary glimpses of Martian canals—but his own vantage point was much the more privileged.

The scale of the grand gay solemn procession parading before his vision gave him trouble. He caught himself trying to interpret the unknown in terms of the known. These organisms reminded him of the starry skeletons of terrestrial cities by night, glimpsed from the stratosphere, or of clusters of diatoms floating in a drop of water. It was hard to remember that the living geometries he was scanning were each the size of a large island—perhaps a couple of hundred miles across.

Terror still lurked. Ezard knew he had only to adjust the infrared scanners to look miles deeper down into Jupiter's atmosphere and find—life?—images?—of a different kind. To date, the Jupiter Expedition had resolved six levels of life-images, each level separated from the others almost as markedly as sea was separated from air, by pressure gradients that entailed different chemical compositions.

Layer on layer, down they went, stirring slowly, right down far beyond detection into the sludgy heart of the protosun! Were all layers full of at least the traces and chimeras of life?

"It's like peering down into the human mind!" Ian Ezard exclaimed; perhaps he thought of the mind of Jerry Wharton, his mixed-up brother-in-law. Vast pressures, vast darknesses, terrible wisdoms, age-long electric storms—the parallel between Jupiter's atmospheric depths and the mind was too disconcerting. He sat up and pushed the viewing helmet back on its swivel.

The observation room closed in on him again, unchanging, wearily familiar.

"My god!" he said, feebly wiping his face. "My god!" And after a moment, "By Jove!" in honor of the monstrous protosun riding like a whale beneath their ship. Sweat ran from him.

"It's a spectacle right enough," Captain Dudintsev said, handing him a towel. "And each of the six layers we have surveyed is over one hundred times the area of Earth. We are recording most of it on tape. Some of the findings are being relayed back to Earth now."

"They'll flip!"

"Life on Jupiter—what else can you call it but life?! This is going to hit Russia and America and the whole of Westciv harder than any scientific discovery since reproduction!"

Looking at his wristputer, Ezard noted that he had been under

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the viewer for eighty-six minutes. "Oh, it's consciousness there right enough. It stands all our thinking upside down. Not only does Jupiter contain most of the inorganic material of the system, the sun apart—it contains almost all the life as well. Swarming, superabundant life . . . Not an amoeba smaller than Long Island . . . It makes Earth just a rocky outpost on a far shore. That's a big idea to adjust to!"

"The White World will adjust, as we adjusted to Darwinism. We always do adjust."

"And who cares about the Black World . . ."

Dudintsev laughed. "What about your sister's husband whom you're always complaining about? He'd care!"

"Oh, yes, he'd care. Jerry'd like to see the other half of the globe wiped out entirely."

"Well, he's surely not the only one."

With his head still full of baffling luminescent gestures, Ezard went forward to shower.

II. LUNA. Near to deep midnight in Rainbow Bay City. Standing under Main Dome at the top of one of the view-towers. The universe out there before us, close to the panes; stars like flaming fat; distorted by the dome's curvature, Earth like a chilled fingernail clipping. Chief Dream-Technician Wace and I talking sporadically, killing time until we went back on duty to what my daughter Ri calls "the big old black thing" over in Plato.

"Specialization—it's a wonderful thing, Jerry!" Wace said. "Here we are, partway to Jupiter, and I don't even know where in the sky to look for it! The exterior world has never been my province."

He was a neat little dry man, in his mid-thirties and already wizened. His province was the infinitely complex state of being of sleep. I had gained a lot of my interest in psychology from Johnnie Wace. Like him, I would not have been standing where I was were it not for the CUFL project, on which we were both working. And that big old black thing would not have been established inconveniently on the Moon, had not the elusive hypnoid states between waking and sleeping which we were investigating been most easily sustained in the light-gravity conditions of Luna.

I gave up the search for Jupiter. I knew where it was no more than Wace did. Besides, slight condensation was hatching drops off the aluminum bars overhead; the drafts of the dome brought the drops down slantingly at us. Tension was returning to me as the time to go on shift drew near —tension we were not allowed to blunt with drink. Soon I would be plugged in between life and

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death, letting CUFL suck up my psyche. As we turned away, I looked outside at an auxiliary dome under which cactus grew in the fertile lunar soil, sheltered only slightly from external rigors.

"That's the way we keep pushing on, Johnnie," I said, indicating the cacti. "We're always extending the margins of experience—now the Trans-Jupiter Expedition has discovered that life exists out there. Where does the West get its dynamism from, while the rest of the world—the Third World—still sits on its haunches?"

Wace gave me an odd look.

"I know, I'm on my old hobby-horse! You tell me, Johnnie, you're a clever man, how is it that in an age of progress half the globe won't progress?"

"Jerry, I don't feel about the Blacks as you do. You're such an essential part of CUFL because your basic symbols are confused."

He noticed that the remark angered me. Yet I saw the truth as I stated it. Westciv, comprising most of the Northern Hemisphere and little else, bar Australia, was a big armed camp, guarding enormously long frontiers with the stagnating Black or Third World, and occasionally making a quick raid into South America or Africa to quell threatening power build-ups. All the time that we were trying to move forward, the rest of the overcrowded world was dragging us back.

"You know my views, Johnnie—they may be unpopular but I've never tried to hide them," I told him, letting my expression grow dark. "I'd wipe the slate of the useless Third World clean and begin over, if I had my way. What have we got to lose? No confusion in my symbols there, is there?!"

"Once a soldier, always a soldier . . ." He said no more until we were entering the elevator. Then he added, in his quiet way, "We can all of us be mistaken, Jerry. We now know that the freshly charted ypsilon-areas of the brain make no distinction between waking reality and dream. They deal only with altering time-scales, and form the gateway to the unconscious. My personal theory is that Western man, with his haste for progress, may have somehow closed the gate and lost touch with something that is basic to his psychic well-being."

"Meaning the Blacks are still in touch?"

"Don't sneer! The history of the West is nothing to be particularly proud of. You know that our CUFL project is in trouble and may be closed down. Sure, we progress astonishingly on the material plane, we have stations orbiting the Sun and inner planets and Jupiter—yet we remain at odds with ourselves. CUFL is in-

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tended to be to the psyche what the computer is to knowledge, yet it consistently rejects our data. The fault is not in the machine. Draw your own conclusions."

I shrugged. "Let's get on shift!"

We reached the surface and climbed out, walking in the direction of the tube where a shuttle for Plato would be ready. The big old black thing would be sitting waiting by the crater terminus, and, under the care of Johnnie Wace's team, I and the other feeds would be plugged in. Sometimes I felt lost in the whole tenuous world that Wace found so congenial, and in all the clever talk about what was dream, what was reality—though I used it myself sometimes, in self-defense.

As we made for the subway, the curve of the dome distorted the cacti beyond. Frail though they were, great arms of prickly pear grew and extended and seemed to wrap themselves round the dome, before being washed out by floods of reflected electroluminescence. Until the problem of cutting down glare at night was beaten, tempers in Main Dome would stay edgy.

In the subway, still partly unfinished, Wace and I moved past the parade of fire-fighting equipment and emergency suits and climbed into the train. The rest of the team were already in their seats, chattering about the ambiguous states of mind that CUFL encouraged; they greeted Johnnie eagerly, and he joined in their conversation. I longed to be back with my family—such as it was—or playing a quiet game of chess with Ted Greaves, simple old soldier Ted Greaves. Maybe I should have stayed a simple old soldier myself, helping to quell riots in the overcrowded lanes of Eastern Seaboard, or cutting a quick swath through Brazil.

"I didn't mean to rub you up the wrong way, Jerry," Wace said as the door closed. His little face wrinkled with concern.

"Forget it. I jumped at you. These days, life's too complex."

"That from you, the apostle of progress!"

It's no good talking . . . "Look, we've found life on Jupiter. That's great. I'm really glad, glad for Ezard out there, glad for everyone. But what are we going to do about it? Where does it get us? We haven't even licked the problem of life on Earth yet!"

"We will," he said.

We began to roll into the dark tunnel.

III. RI. One of the many complications of life on Earth was the dreams of my daughter. They beguiled me greatly: so much that I believe they often became entangled with my fantasies as I lay relaxed on Wace's couch under the encephalometers and

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the rest of the CUFL gear. But they worried me even as they enchanted me. The child is so persistently friendly that I don't always have time for her, but her dreams are a different matter.

In the way that Ri told them, the dreams had a peculiar lucidity. Perhaps they were scenes from a world I wanted to be in, a toy world—a simplified world that hardly seemed to contain other people.

Ri was the fruit of my third-decade marriage. My fourth-decade wife, Natalie, also liked to hear Ri's prattle; but Natalie is a patient woman, both with Ri and me; more with Ri, maybe, since she likes to show me her temper.

A certain quality to Ri's dreams made Natalie and me keep them private to ourselves. We never mentioned them to our friends, almost as if they were little, shared guilty secrets. Nor did I ever speak of them to my buddies sweating on the CUFL project, or to Wace, or the mind-wizards in the Lunar Psyche Lab. For that matter, Natalie and I avoided discussing them between ourselves, partly because we sensed Ri's own reverence for her nocturnal images.

Then my whole pleasure at the child's dreams was turned into disquiet by a casual remark that Ted Greaves dropped.

This is how it came about.

I had returned from Luna on the leave-shuttle only the previous day, more exhausted than usual. The hops between Kennedy and Eastern and Eastern and Eurocen were becoming more crowded than ever, despite the extra jumbos operating; the news of the discovery of life on Jupiter —even the enormous telecasts of my brother-in-law's face burning over every Westciv city—seemed to have stirred up the ants' heap considerably. What people thought they could do about it was beyond computation, but Wall Street was registering a tidal wave of optimism.

So with one thing and another, I arrived home exhausted. Ri was asleep. Yes, still wetting her bed, Natalie admitted. I took a sauna and fell asleep in my wife's arms. The world turned. Next thing I knew, it was morning and I was roused by Ri's approach to our bedside.

Small girls of three have a ponderous tread; they weigh as much as baby elephants. I can walk across our bedroom floor without making a sound, but this tot sets up vibrations.

"I thought you were still on the Moon feeding the Clective Unctious, Daddy," she said. The "Clective Unctious" is her inspired mispronunciation of the Collective Unconscious; wisely, she makes no attempt at all at the Free-Living tail of CUFL.

"The Unctious has given me a

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week's leave, Ri. Now let me sleep! Go and read your book!"

I watched her through one half-open eye. She put her head on one side and smiled at me, scratching her behind.

"Then that big old black thing is a lot cleverer and kinder than I thought it was."

From her side of the bed, Natalie laughed. "Why, that's the whole idea of the Clective Unctious, Ri—to be kinder and wiser than one person can imagine."

"I can imagine *lots* of kindness," she said. She was not to be weaned of her picture of the Unctious as a big black thing.

Climbing on to the bed, she began to heave herself between Natalie and me. She had brought along a big plastic talkie-picture-book of traditional design tucked under one arm. As she rolled over me, she swung the book and a corner of it caught me painfully on the cheek. I yelled.

"You clumsy little horror! Get off me!"

"Daddy, I didn't mean to do it really! It was an acciment!"

"I don't care what it was! Get out! Go on! Move! Go back to your own bed!"

I tugged at her arm and dragged her across me. She burst into tears.

Natalie sat up angrily. "For god's sake, leave the kid alone! You're always bullying her!"

"You keep quiet—she didn't catch you in the eye! And she's peed her bed again, the dirty little tyke!"

That was how that row started. I'm ashamed to relate how it went on. There were the tears from the child and tears from Natalie. Only after breakfast did everyone simmer down. Oh, I can be fairly objective now in this confession, and record my failings and what other people thought of me. Believe me, if it isn't art, it's therapy!

It's strange to recall now how often we used to quarrel over breakfast . . . Yet that was one of the calmest rooms, with the crimson carpet spread over the floor-tiles, and the white walls and dark Italian furniture. We had old-fashioned two-dimensional oil paintings, non-mobile, on the walls, and no holoscreen. In one corner, half hidden behind a vase of flowers from the courtyard, stood Jannick, our robot housemaid; but Natalie, preferring not to use her, kept her switched off. Jannick was off on this occasion. Peace reigned. Yet we quarreled.

As Natalie and I were drinking a last cup of coffee, Ri trotted round to me and said, "Would you like to hear my dream now, Daddy, if you're really not savage any more?"

I pulled her on to my knee. "Let's hear it then, if we must.

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Was it the one about warm pools of water again?"

She shook her head.

"This dream came around three in the morning," she said. "I know what the time was because a huge black bird like a starving crow came and pecked at my window as if it wanted to get in and wake us all up."

"That was all a part of the dream, then. There aren't any crows in this stretch of Italy."

"Perhaps you're right, because the house was sort of dirtier than it really is . . . So I sat up and immediately I began dreaming I was fat and heavy and carrying a big fat heavy talkie-book up the hill. It was a much bigger book than any I got here. I could hardly breathe because there was hardly any air up the hillside. It was a very *plain* sort of dream."

"And what happened in it?"

"Nothing."

"Nothing at all?"

"Nothing except just one thing. Do you know what? I saw there was one of those new Japanese cars rushing down the hill towards me—you know, the kind where the body's inside the wheel and the big wheel goes all round the body."

"She must mean the Toyota Monocar," Natalie said.

"Yes, that's right, Natalie, the Toyta Moggacar. It was like a big flaming wheel and it rolled right past me and went out."

"Out where?"

"I don't know. Where do things go out to? I didn't even know where it came from! In my dream I was puzzled about that, so I looked all round and by the roadside there was a big drop. It just went down and down! And it was guarded by eight posts protecting it, little round white posts like teeth, and the Moggacar must have come from there."

Natalie and I sat over the table thinking about the dream after Ri had slipped out into the courtyard to play; she had some flame- and apricot-colored finches in cages which she loved.

I was on her small imaginary hillside, where the air was thin and the colors pale, and the isolated figure of the child stood clutching its volume and watched the car go past like a flame. A Sun-symbol, the wheel on which Ixion was crucified, image of our civilization maybe, Tantric sign of sympathetic fires . . . All those things, and the first unmanned stations now orbiting the sun—one of the great achievements of Westciv, and itself a symbol awakening great smoldering responses in man. Was that response reverberating through the psyches of all small children, changing them, charging them further along the trajectory the White World follows? What would the news from Jupiter bring on? What sort of role

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would Uncle Ian, the life-finder, play in the primitive theaters of Ri's mind?

I asked the questions of myself only idly. I enjoyed popping the big questions, on the principle that if they were big enough, they were sufficient in themselves and did not require answers. Answers never worried me in those days. I was no thinker. My job in Plato concerned feelings, and for that they paid me. Answers were for Johnnie Wace and his cronies.

"We'd better be moving," Natalie said, collecting my coffee cup. "Since you've got a free day, make the most of it. You're on frontier duty with Greaves again tomorrow."

"I know that without being reminded, thanks."

"I wasn't really reminding you —just stating a fact."

As she passed me to go into the kitchen, I said, "I know this house is archaic—just a peasant's home. But if I hadn't volunteered for irregular frontier service during my off-duty spells, we wouldn't be here. We'd be stuck in Eastern or some other enormous city-complex, such as the one you spent your miserable childhood in. Then you'd complain even more!"

She continued into the kitchen with the cups and plates. It was true the house had been built for and by peasants, or little better; its stone walls, a meter thick, kept out the heat of summer, and the brief chill of winter when it rolled round. Natalie was silent and then she said, so quietly that I could scarcely hear her where I sat in the living room, "I was not complaining, Jerry, not daring to complain . . ."

I marched in to her. She was standing by the sink, more or less as I imagined her, her dark wings of hair drawn into place by a rubber band at the nape of her neck. I loved her, but she could make me mad!

"What's that meant to mean—'not daring to complain'?"

"Please don't quarrel with me, Jerry. I can't take much more."

"Was I quarreling? I thought I was simply asking you what you meant by what you said!"

"Please don't get worked up!" She came and stood against me, putting her arms round my waist and looking up at me. I stiffened myself and would not return her gaze. "I mean no harm, Jerry. It's terrible the way we row just like everyone else—I know you're upset!"

"Of course I'm upset! Who wouldn't be upset at the state of the world? Your marvelous brother and his buddies have discovered life on Jupiter! Does that affect us? *My* project, CUFL, that will have to close down unless we start getting results. Then there's all the disturbance in the

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universities—I don't know what the younger generation thinks it's doing! Unless we're strong, the Thirdies are going to invade and take over—"

She was growing annoyed herself now. "Oh, yes, that's really why we came to live down here in the back of beyond, isn't it? —Just so that you could get an occasional crack at the enemy. It wasn't for any care about where I might want to live."

"Unlike some people, I care about doing my duty by my country!"

She broke away from me. "It's no part of your duty to be incessantly beastly to Ri and me, is it? Is it? You don't care about us one bit!"

It was an old tune she played.

"Don't start bringing that up again, woman! If I didn't care, why did I buy you that robot standing idle in the next room? You never use it, you prefer to hire a fat old woman to come in instead! I should have saved my money! And you have the brass nerve to talk about not caring!"

Her eyes were wild now. She looked glorious standing there.

"You don't care! You don't care! You hurt your poor little daughter, you neglect me! You're always off to the Moon, or at the frontier, or else here bullying us. Even your stupid friend Ted Greaves has more sense than you! You hate us! You hate everyone!"

Running forward, I grabbed her arm and shook her.

"You're always making a noise! Not much longer till the end of the decade and then I'm rid of you! I can't wait!"

I strode through the house and slammed out of the door into the street. Thank the stars it was frontier duty the next day! People greeted me but I ignored them. The sun was already high in the South Italian sky; I sweated as I walked, and rejoiced in the discomfort.

It was not true that I bullied them. Natalie might have suffered as a child, but so had I! There had been a war in progress then, the first of the Westciv-Third wars, although we had not thought of it in quite those terms at the time, before the Cap-Com treaty. I had been drafted, at an age when others were cutting a figure in the university. I had been scared, I had suffered, been hungry, been wounded, been lost in the jungle for a couple of days before the chopper patrol picked me up. And I'd killed off a few Thirdies. Even Natalie would not claim I had *enjoyed* doing that. It was all over long ago. Yet it was still with me. In my mind, it never grew fainter. The Earth revolved; the lights on that old stage never went dim.

Now I was among the hills above our village. I sat under the

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shade of an olive tree and looked back. It's strange how you find yourself thinking things that have nothing to do with your daily life.

It was no use getting upset over a husband-wife quarrel. Natalie was okay, just a little hasty-tempered. My watch said close to ten o'clock. Ted Greaves would be turning up at the house for a game of chess before long. I would sit where I was for a moment, breathe deep, and then stroll back. Act naturally. There was nothing to be afraid of.

IV. GREAVES. Ted Greaves arrived at the house at about ten-fifty. He was a tall fair-haired man, dogged by ill-luck most of his military career and somewhat soured towards society. He enjoyed playing the role of bluff old soldier. After many years in the service, he was now Exile Officer, commanding our sector of the southern frontier between Westciv and the Blacks. As such, he would be my superior tomorrow, when I went on duty. Today, we were just buddies and I got the chess board out.

"I feel too much like a pawn myself to play well today," he said, as we settled down by the window. "Spent all the last twenty-four hours in the office filling in photoforms. We're sinking under forms! The famine situation in North Africa is now reinforced by a cholera epidemic."

"The Third's problems are nothing to do with us!"

"Unfortunately we're more connected than appears on the surface. The authorities are afraid that the cholera won't respect frontiers. We've got to let some refugees through tomorrow, and they could be carriers. An emergency isolation ward is being set up. It's Westciv's fault—we should have given aid to Africa from the start."

On the Rainbow-Kennedy flight, I had bought a can of bourbon at a duty-free price. Greaves and I broached it now. But he was in a dark mood, and was soon launched on an old topic of his, the responsibility of the United States for the White-Black confrontation. I did not accept his diagnosis for one minute, and he knew I didn't; but that did not stop his rambling on about the evils of our consumer society, and how it was all based on jealousy, and the shame of the Negro Solution—though how we could have avoided the Solution, he did not say. Since we had been mere children at the time of the Solution, I could not see why he needed to feel guilt about it. In any case, I believed that the colored races of Third were undeveloped because they lacked the intellect and moral fiber of Westciv, their hated Pinkeyland.

So I let Greaves give vent to his feelings over the iced bour-

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bon, while I gazed out through the window to our inner courtyard.

The central stone path, flanked by a colonnade on which bougainvillaea rioted, led to a little statue of Diana, executed in Carrara marble, standing against the far wall. All the walls of the courtyard were plastered in yellow. On the left-hand side, Ri's collection of finches chirped and flitted in their cages. In the beds, orange and lemon trees grew. Above the far wall, the mountains of Calabria rose.

I never tired of the peace of that view. But what chiefly drew my eyes was the sight of Natalie in her simple green dress. I had loved her in many forms, I thought, and at the end of the decade it would not come too hard to exchange her for another —better anyhow than being stuck with one woman a life long, as under the old system—but either I was growing older or there was something particular about Natalie. She was playing with Ri and talking to the Calabrian servant. I couldn't hear a word they said, though the windows were open to let in warmth and fragrance; only the murmur of their voices reached me.

Yes, she had to be exchanged. You had to let things go. That was what kept the world revolving. Planned obsolescence as a social dynamic, in human relationships as in consumer goods. When Ri was ten, she would have to go to the appropriate Integration Center, to learn to become a functioning member of society—just as my other daughter, Melisande, had left the year before, on her tenth birthday.

Melisande, who wept so much at the parting . . . a sad indication of how much she needed integration. We were all required to make sacrifices; otherwise the standard of living would go down. Partings one grew hardened to. I scarcely thought of Melisande nowadays.

And when I'd first known Natalie. Natalie Ezard. That was before the integration laws. "Space travel nourishes our deepest and most bizarre wishes." Against mental states of maximum alertness float extravagant hypnoid states which color the outer darkness crimson and jade, and make unshapely things march to the very margins of the eye. Maybe it is because at the very heart of the richness of metal-bound space-travel lies sensory deprivation. For all its promise of renaissance, vacuum-flight is life's death, and only the completely schizoid are immune to its terrors. I was never happy, even on the Kennedy-Rainbow trip.

Between planets, our most outré desires become fecund. Space travel nourishes our deepest and

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most bizarre wishes. "Awful things can happen!" Natalie had cried, in our early days, flinging herself into my returning arms. And while I was away, Westciv passed its integration laws, separating parents from children, bestowing on ten-year-olds the honorable orphanage of the state, to be trained as citizens.

It all took place again before the backdrop of our sunlit courtyard, where Natalie Wharton now stood. She was thinner and sharper than she had been once, her hair less black. Someday, we would have to take the offensive and wipe out every single Black in the Black-and-White world. To my mind, only the fear of what neutral China might do had prevented us taking such a necessary step already.

"You see how old it is out there!" Ted Greaves said, misreading my gaze as he gestured into the courtyard. "Look at that damned vine, that statue! Apart from lovely little Natalie and your daughter, there's not a thing that hasn't been in place for a couple of hundred years. Over in the States, it's all new, new, everything has to be the latest. As soon as roots begin forming, we tear them up and start over. The result—no touchstones! How long's this house been standing? Three centuries? In the States, it would have been swept away long ago. Here, loving care keeps it going, so that it's as good as new. Good as new!—See how I'm victim of my own cliches! It's better than new, it's as good as old!"

"You're a sentimentalist, Ted. It isn't things but other people that matter. People are old, worlds are old. The Russo-American ships now forging round the system are bringing home to us just how old we are, how familiar we are to ourselves. Our roots are in ourselves."

We enjoyed philosophizing, that's true.

He grunted and lit a flash-cigar. "That comes well from you, when you're building this Free-Living Collective Unconscious. Isn't that just another American project to externalize evil and prune our roots?"

"Certainly not! CUFL will be an emotions-bank, a computer, if you like, which will store—not the fruits of the human intellect—but the fruits of the psyche. Now that there are too many people around and our lives have to be regimented, CUFL will restore us to the freedom of our imaginations."

"If it works!"

"Sure, if it works," I agreed. "As yet, we can get nothing out of our big old black thing but primitive archetypal patterns. It's a question of keeping on feeding it." I always spoke more cheerfully than I felt with Greaves: to

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counteract his vein of pessimism, I suppose.

He stood up and stared out of the window. "Well, I'm just a glorified soldier—and without much glory. I don't understand emotion-banks. But maybe you overfed your big black thing and it is dying of overnourishment, just like Westciv itself. Certain archetypal dreams—the human young get them, so why not your newborn machine? The young get them especially when they are going to die young."

Death was one of his grand themes; "the peace that passeth all standing," he called it once.

"What sort of dreams?" I asked, unthinking.

"To the nervous system, dream imagery is received just like sensory stimulae. There are prodromal dreams, dreams that foretell of death. We don't know what wakefulness is, do we, until we know what dreams are. Maybe the whole Black-White struggle is a super-dream, like a blackbird rapping on a windowpane."

Conversation springs hidden thoughts. I'd been listening, but more actively I'd wondered at the way he didn't answer questions quite directly, just as most people fail to. Someone told me that it was the effect of holovision, split attention. All this I was going through when he came up with the remark about blackbirds tapping on windows, and it brought to mind the start of Ri's latest dream, when she was unsure whether she woke or slept.

"What's that to do with dying?"

"Let's take a walk in the sun before it gets too stinking hot. Some children are too ethereal for life. Christ, Jerry, a kid's close to the primal state, to the original psychological world; they're the ones to come through with uncanny prognoses. If they aren't going to make it to maturity, their psyches know about it and have no drive to gear themselves onto the next stage of being."

"Let's go out in the sun," I said. I felt ill. The poinsettia were in flower, spreading their scarlet tongues. A lizard lay along a carob branch. That sun disappearing down Ri's hill—death? And the eight teeth or posts or what the hell they were, on the edge of nothing—her years? The finches hopped from perch to perch, restless in their captivity.

V. SICILY. Almost before daybreak next morning, I was flying over Calabria and the toe of Italy. Military installations glittered below. This was one of the southern points of Europe which marked the frontier between the two worlds. It was manned by task forces of Americans, Europeans, and Russians. I had left before Ri woke. Natalie, with her wings of dark hair, had risen to

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wave me good-bye. Good-bye, it was always good-bye. And what was the meaning of the big black book Ri had been carrying in her dream? It couldn't be true.

The Straits of Messina flashed below our wingless fuselage. Air, water, earth, fire, the original elements. The fifth, space, had been waiting. God alone knew what it did in the hearts and minds of man, what aboriginal reaction was in process. Maybe once we finished off the Thirdies, the Clective Unctious would give us time to sort things out. There was never time to sort things out. Even the finches in their long imprisonment never had enough time. And the bird at her window? Which side of the window was in, which out?

We were coming down towards Sicily, towards its tan mountains. I could see Greaves's head and shoulders in the driver's seat.

Sicily was semi-neutral ground. White and Black world met in its eroded valleys. My breakfast had been half a grapefruit, culled fresh from the garden, and a cup of bitter black coffee. Voluntary regulation of intake. On the other side of the looming frontier, starvation would have made my snack seem a fine repast.

Somewhere south, a last glimpse of sea and the smudged distant smoke of Malta, still burning after ten years. Then up came Etna and the stunned interior, and we settled for a landing.

This barren land looked like machine-land itself. Sicily—the northern, Westoiv half—had as big a payload of robots on it as the moon itself. All worked in mindless unison in case the lesser breeds in the southern half did anything desperate. I grabbed up my gas-cannon and climbed out into the heat as a flight of steps snapped itself into position.

Side by side, Greaves and I jumped into proffered pogo-armor and bounded off across the field in thirty-foot kangaroo-steps.

The White boundary was marked by saucers standing on poles at ten-meter intervals; between saucers, the force-barrier shimmered, carrying its flair for hallucination right up into the sky.

The Black world had its boundary too. It stood beyond our force-field—stood, I say! It lurched across Sicily, a ragged wall of stone. Much of the stone came from dismembered towns and villages and churches. Every now and again, a native would steal some of the stone back, in order to build his family a hovel to live in. Indignant Black officials would demolish the hovel and restore the stone. They should have worried! I could have pogoed over their wall with ease!

And a wall of eight posts . . .

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We strode across the crowded field to the forward gate. Sunlight and gravity. We were massive men, nine feet high or more, boots two feet high; over our heads, umbrella-helmets over a foot high. Our megavoices could carry over a land-mile. We might have been evil machine-men from the ragged dreams of Blacks. At the forward gate, we entered in and shed the armor in magnetized recesses.

Up in the tower, Greaves took over from the auto-controls and opened his link with Palermo and the comsats high overhead. I checked with Immigration and Isolation to see that they were functioning.

From here, we could look well into the hated enemy territory, over the tops of their wooden towers, into the miserable stone villages, from which hordes of people were already emerging, although fifty minutes had yet to elapse before we lowered the force-screens to let any of them through. Beyond the crowds, the mountains crumbling into their thwarted valleys, fly-specked with bushes. No fit habitation. If we took over the island—as I always held we should—we would raise desalination-plants on the coast, import topsoil and fertilizer and the new plus-crops, and make the whole place flow with riches in five years. With the present status quo, the next five would bring nothing but starvation and religion; that was all they had there. A massive cholera epidemic, with deaths counted in hundreds of thousands, was raging through Africa already, after moving westwards from Calcutta, its traditional capital.

"The bastards!" I said. "One day, there will be a law all over the world forbidding people to live like vermin!"

"And a law forbidding people to make capital out of it," Greaves said. His remark meant nothing to me. I guessed it had something to do with his cranky theory that Westciv profited by the poor world's poverty by raising import tariffs against it. Greaves did not explain, nor did I ask him to.

At the auxiliary control panel, I sent out an invisible scanner to watch one of the enemy villages. Although it might register on the antiquated radar screens of the Blacks, they could only rave at the breach of international regulations without ever being able to intercept it.

The eye hovered over a group of shacks and adjusted its focus. Three-dimensionally, the holograph of hatred traveled towards me in its cube.

Against doorways, up on balconies decked with ragged flowers, along alleys, stood groups of Blacks. They would be Arabs, refugee Maltese, branded Sicilians, renegades from the White

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camp; ethnic groups were indistinguishable beneath dirt and tan and old non-synthetic clothes. I centered on a swarthy young woman standing in a tavern doorway with one hand on a small boy's shoulder. As Natalie stood in the courtyard under the poinsettia, what had I thought to myself? That once we might have propagated love between ourselves?

Before the world had grown too difficult, there had been a sure way of multiplying and sharing love. We would have bred and raised children for the sensuous reward of having them, of helping them grow up sane and strong. From their bowels also, health would have radiated.

But the Thirdies coveted Westciv's riches without accepting its disciplines. They bred. Indiscriminately and prodigally. The world was too full of children and people, just as the emptiness of space was stuffed with lurid dreams. Only the weak and helpless and starved could cast children onto the world unregulated. Their weak and helpless and starved progeny clogged the graves and wombs of the world. That laughing dark girl on my screen deserved only the bursting seed of cannonfire.

"Call that scanner back, Jerry!" Greaves said, coming towards me.

"What's that?"

"Call your scanner back."

"I'm giving the Wogs the once-over."

"Call it back in, I told you. As long as no emergency's in force, you are contravening regulations."

"Who cares!"

"I care," he said. He looked very nasty. "I care, and I'm Exile Officer."

As I guided the eye back in, I said, "You were rough all yesterday, too. You played a bum game of chess. What's got into you?"

But as soon as I had asked the question, I could answer it myself. He was a bag of nerves because he must have had word that his son was coming back from the wastes of the Third World.

"You're on the hook about your anarchist son, Pete, aren't you?"

It was then he flung himself at me.

In the dark tavern, Pete Greaves was buying his friends one last round of drinks. He had been almost three weeks in the seedy little town, waiting for the day the frontier opened; in that time, he had got to know just about everyone in the place. All of them—not just Max Spineri who had traveled all the way from Alexandria with him—swore eternal friendship on this parting day.

"And a plague on King Cholera!" Pete said, lifting his glass.

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"Better get back to the West before King Cholera visits Sicily!" a mule-driver said.

The drink was strong. Pete felt moved to make a short speech.

"I came here a stupid prig, full of all the propaganda of the West," he said. "I'm going back with open eyes. I've become a man in my year in Africa and Sicily, and back home I shall apply what I've learned."

"Here's your home now, Pete," Antonio, the barman, said. "Don't go back to Pinkeyland or you'll become a machine like the others there. We're your friends—stay with your friends!" But Pete noticed the crafty old devil short-changed him.

"I've got to go back, Antonio—Max will tell you. I want to stir people up, make them listen to the truth. There's got to be change, got to be, even if we wreck the whole present set-up to get it. All over Pinkeyland, take my word, there are thousands—millions—of men and girls my age who hate the way things are run."

"It's the same as here!" a peasant laughed.

"Sure, but in the West, it's different. The young are tired of the pretense that we have some say in government, tired of bureaucracy, tired of a technocracy that simply reinforces the powers of the politicians. Who cares about finding life on Jupiter when life here just gets lousier!"

He saw—it had never ceased to amaze him all his time in Blackeyland—that they were cool to such talk. He was on their side, as he kept telling them. Yet at best their attitude to the Whites was ambivalent: a mixture of envy and contempt for nations that they saw as slaves to consumer goods and machines.

He tried again, telling them about Student Power and the Underground, but Max interrupted him. "You have to go soon, Pete. We know how you feel. Take it easy—your people find it so hard to take it easy. Look, I've got a parting gift for you . . ."

Drawing Pete back into a corner, he produced a gun and thrust it into his friend's hand. Examining it, Pete saw it was an ancient British Enfield revolver, well-maintained. "I can't accept this, Max!"

"Yes, you can! It's not from me but from the Organization. To help you in your revolution. It's loaded with six bullets! You'll have to hide it, because they will search you when you cross the frontier."

He clasped Max's hand. "Every bullet will count, Max!"

He trembled. Perhaps it was mainly fear of himself.

When he was far from the heat and flies and dust and his ragged, unwashed friends, he would

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hold this present brave image of himself, and draw courage from it.

He moved out into the sun, to where Roberta Arneri stood watching the convoy assembling for the short drive to the frontier gate. He took her hand.

"You know why I have to go, Roberta?"

"You go for lots of reasons."

It was true enough. He stared into the harsh sunlight and tried to remember. Though hatred stood between the two worlds, there were areas of weakness where they relied on each other. Beneath the hatred were ambiguities almost like love. Though a state of war existed, some trade continued. And the young could not be pent in. Every year, young Whites—"anarchists" to their seniors—slipped over the frontier with ambulances and medical supplies. And the supplies were paid for by their seniors. It was conscience money. Or hate money. A token, a symbol—nobody knew for what, though it was felt to be important, as a dream is felt to be important even when it is not comprehended.

Now he was going back. Antonio could be right. He would probably never return to the Third World; his own world would most likely make him into a machine.

But he had to bear witness. He was sixteen years old.

"Life without plumbing, life with a half-full belly," he had to go home and say. "It has a savor to it. It's a positive quality. It doesn't make you less a human being. There's no particular virtue in being white of skin and fat of gut and crapping into a nice china bowl every time the laxatives take hold."

He wondered how convincing he could make it sound, back in the immense hygienic warrens of Westciv—particularly when he still longed in his inner heart for all the conveniences and privileges, and a shower every morning before a sit-down breakfast. It had all been fun here, but enough was enough. More than enough, when you remembered what the plague was doing.

"You go to see again your father," Roberta diagnosed.

"Maybe. In America, we are trying to sever the ties of family. After you get through with religion, you destroy the sacredness of the family. It encourages people to move to other planets, to go where they're told."

He was ashamed of saying it—and yet half proud.

"That's why you all are so nervous and want to go to war all the time. You don't get enough kisses as little kids, eh?"

"Oh, we're all one-man isolation units! Life isn't as bad as you think, up there among the wheels of progress, Roberta," he

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said bitterly. He kissed her, and her lips tasted of garlic.

Max slapped him on his shoulder.

"Cut all that out, feller—you're going home! Get aboard!"

Pete climbed onto the donkey cart with another anarchist White who had recently sailed across to the island from Tunisia. Pete had arrived in the mysterious Third World driving a truck full of supplies. The truck had been stolen in Nubia, when he was down with malaria and dysentery. He was going back empty-handed. But the palms of those hands were soft no longer.

He shook Max's hand now. They looked at each other wordlessly as the cart-driver goaded his animal into movement. There was affection there, yes—undying in its way, for Max was also a would-be extremist; but there was also the implacable two-way enmity that sprang up willy-nilly between Haves and Have-nots. An enmity stronger than men, incurable by men. They both dropped their gaze.

Hiding his embarrassment, Pete looked about him. In his days of waiting, the village had become absolutely familiar, from the church at one end to the broken-down bursts of cactus in between. He had savored too the pace of life here, geared to the slowest and most stupid, so that the slowest and most stupid could survive. Over the frontier, time passed in overdrive.

Across the drab stones, the hoofs of the donkey made little noise. Other carts were moving forward, with dogs following, keeping close to the walls. There was a feeling—desperate and exhilarating—that they were leaving the shelter of history, and heading towards where the powerhouse of the world began.

Pete waved to Max and Roberta and the others, and squinted towards the fortifications of his own sector. The frontier stood distant but clear in the pale air. As he looked, he saw a giant comic-terror figure, twice as high as a grown man, man-plus-machine, bound across the plain towards him. Bellowing with an obscene anger as it charged, the monster appeared to burn in the sun.

It came towards him like a flaming wheel rushing down a steep hill, all-devouring.

VI. EGO. Ted Greaves was my friend of long-standing. I don't know why he flung himself on me in hatred just because I taunted him about his son. For that matter, I don't know why anger suddenly blazed up in me as it did.

My last spell on CUFL had left me in relatively poor shape, but fury lent me strength. I ducked away from his first blow

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and chopped him hard below the heart. As he doubled forward, grunting with pain, I struck him again, this time on the jaw. He brought his right fist up and grazed my chin, but by then I was hitting him again and again. He went down.

These fits had come over me before, but not for many years. When I was aware of myself again, I was jumping into the pogo-armor, with only the vaguest recollections of what I had done to Greaves. I could recall I had let the force-barrier down.

I went leaping forward towards the hated land. I could hear the gyros straining, hear my voice bellowing before me like a spinnaker.

"You killed my daughter! You killed my daughter! You shan't get in! You shan't even look in!"

I didn't know what I was about.

There were animals scattering. I overturned a cart. I was almost at the first village.

It felt as if I was running at a hundred miles an hour. Yet when the shot rang out, I stopped at once. How beautiful the hills were if one's eyes never opened and closed again. Pigeons wheeling white above tawdry roofs. People immobile. One day they would be ours, and we would take over the whole world. The whole world shook with the noise of my falling armament, and dust spinning like the fury of galaxies.

Better pain than our eternal soft predicament . . .

I was looking at a pale-faced boy on a cart, he was staggering off the cart, the cart was going from him. People were shouting and fluttering everywhere like rags. My gaze was fixed only on him. His eyes were only on me. He had a smoking revolver in his hand.

Wonderingly, I wondered how I knew he was an American. An American who had seized Ted Greaves's face and tugged it from inside until all the wrinkles were gone from it and it looked obscenely young again. My executioner wore a mask.

A gyro labored by my head as if choked with blood. I could only look up at that mask. Something had to be said to it as it came nearer.

"It's like a Western . . ." Trying to laugh?

Death came down from the Black hills till only his stolen eyes were left, like wounds in the universe.

They disappeared.

When the drugs revived me from my hypnoid trance, I was still plugged to CUFL, along with the eleven other members of my shift, the other slaves of the Clective Unctious.

To the medicos bending over me, I said, "I died again."

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They nodded. They had been watching the monitor screens.

"Take it easy," one of them said. As my eyes pulled into focus, I saw it was Wace.

I was used to instructions. I worked at taking it easy. I was still in the front line, where individuality fought with the old nameless tribal consciousness. "I died again," I groaned.

"Relax, Jerry," Wace said. "It was just a hypnoid dream like you always get."

"But I died again. Why do I always have to die?"

Tommy Wace. His first name was Tommy. Data got mislaid.

Distantly, he tried to administer comfort and express compassion on his dried-up face. "Dreams are mythologies, part-individual, part-universal. Both deprogramming dreams and prognostic-type dreams are natural functions of the self-regulating psychic system. There's nothing unnatural about dreaming of dying."

"But I died again . . . And I was split into two people . . ."

"The perfect defense in a split world. A form of adaptation."

You could never convey personal agony to these people, although they had watched it all on the monitors. Wearily, I passed a hand over my face. My chin felt like cactus.

"So much self-hatred, Tommy . . . Where does it come from?"

"Johnnie. At least you're working it out of your system. Now, here's something to drink."

I sat up. "CUFL will have to close down, Johnnie," I said. I hardly knew what I said. I was back in the real world, in the abrasive lunar laboratory under Plato—and suddenly I saw that I could distinguish true from false.

For years and years—*I'd been mistaken!*

I had been externalizing my self-hatred. The dream showed me that I feared to become whole again in case becoming whole destroyed me.

Gasping, I pushed Wace's drink aside. I was seeing visions. The White World had shed religion. Shed religion, you shed other hope-structures; family life disintegrates. You are launched to the greater structure of science. That was the Westciv way. We had made an ugly start, but we were going ahead. There was no going back. The rest of the world had to follow. No—had to be led. Not shunned, not bullied. Led. Revelation!

Part of our soft predicament is that we can never entirely grasp what the predicament is.

"Johnnie, I don't always have to die," I said. "It's my mistake, our mistake!" I found I was weeping and couldn't stop. Something was dissolving. "The Black-and-White are one, not two! We

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are fighting ourselves. I was fighting myself. Plug me back in again!"

"End of shift," Wace said, advancing the drink again. "You've done more than your stint. Let's get you into Psych Lab for a check-up, and then you're due for leave back on Earth."

"But do you see—" I gave up and accepted his beastly drink.

Natalie, Ri . . . I too have my troubled dreams, little darling . . .

My bed is wetted and my mattress soaked with blood.

John Wace got one of the nurses to help me to my feet. Once I was moving, I could get to Psych Lab under my own power.

"You're doing fine, Jerry!" Wace called. "Next time you're back on Luna, I'll have Jupiter pinpointed for you!"

Doing fine!—I'd only just had all my strongest and most emotionally held opinions switched through one hundred and eighty degrees!

In the Psych Lab, I was so full of tension that I couldn't let them talk. "You know what it's like, moving indistinguishably from hypnoid to dream state—like sinking down through layers of cloud. I began by reliving my last rest period with Natalie and Ri. It all came back true and sweet, without distortion, from the reservoirs of memory! Distortion only set in when I recollected landing in Sicily. What happened in reality was that Ted Greaves and I let his son back through the frontier with the other White anarchists. I found the revolver he was trying to smuggle in—he had tucked it into his boot-top.

"That revolver was the symbol that triggered my nightmare. Our lives revolve through different aspects like the phases of the Moon. I identified entirely with Pete. And at his age, I too was a revolutionary, I too wanted to change the world, I too would have wished to kill my present self!"

"At Pete Greaves' age, you were fighting *for* Westciv, not against it, Wharton," one of the psychiatrists reminded me.

"Yes," I said. "I was in Asia, and handy with a gun. I carved up a whole gang of Thirdies. That was about the time when the Russians threw in their lot with us." I didn't want to go on. I could see it all clearly. They didn't need a true confession.

"The guilt you felt in Asia was natural enough," the psychiatrist said. "To suppress it was equally natural—suppressed guilt causes most of the mental and physical sickness in the country. Since then, it has gone stale and turned to hate."

"I'll try and be a good boy in the future," I said, smiling and mock-meek. At the time, the ramifications of my remark were not

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apparent to me, as they were to the psychiatrist.

"You've graduated, Wharton," he said. "You're due a vacation on Earth right now."

VII. CLECTIVE. The globe, in its endless revolution, was carrying us into shade. In the courtyard, the line of the sun was high up our wall. Natalie had set a mosquito-coil burning; its fragrance came to us where we sat at the table with our beers. We bought the mosquito-coils in the local village store; they were smuggled in from the Third World, and had "Made in Cairo" stamped on the packet.

Ri was busy at one end of the courtyard with a couple of earthenware pots. She played quietly, aware that it was after her bedtime. Ted Greaves and Pete sat with us, drinking beer and smoking. Pete had not spoken a word since they arrived. At that time I could make no contact with him. Did not care to. The ice flows were still melting and smashing.

As Natalie brought out another jar and set it on the rough wood table, Greaves told her, "We're going to have a hero on our hands if your brother flies over to see you when he gets back from Jupiter. Do you think he'll show up here?"

"Sure to! Ian hates Eastern Seaboard as much as most people."

"Sounds like he found Jupiter as crowded as Eastern Seaboard!"

"We'll have the Clective Unctious working by the time he arrives," I said.

"I thought you were predicting it would close down?" Greaves asked.

"That was when it was choked with hate."

"You're joking! How do you choke a machine with hate?"

"Input equals output. CUFL is a reactive store—you feed in hate, so you get out hate."

"Same applies to human beings and human groups," Pete Greaves broke in, rubbing his thumbnail along the table.

I looked at him. I couldn't feel sweet about him. He was right in what he said, but I couldn't agree with him. He had killed me—though it was me masquerading as him—though it had been a hypnoid illusion.

I forced myself to say, "It's a paradox how a man can hate people he doesn't know and hasn't even seen. You can easily hate people you know—people like yourself."

Pete made no answer and wouldn't look up.

"It would be a tragedy if we started hating these creatures on Jupiter just because they are there."

I said it challengingly, but he merely shrugged. Natalie sipped her beer and watched me.

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I asked him, "Do you think some of your wild friends from over the frontier would come along and feed their archetypes into CUFL? Think they could stand the pace and the journey?"

Both he and his father stared at me as if they had been struck.

Before the kid spoke, I knew I had got through to him. He would not have to go quietly schizoid. He would talk to Natalie and me eventually, and we would hear of his travels at first-hand. A few defensive layers had to come down first. Mine and his.

"You have to be joking!" he said.

Suddenly, I laughed. Everyone thought I was joking. Depending on your definition of a joke, I felt I had at last ceased joking after many a year. I turned suddenly from the table, to hide a burning of my eyes.

Taking Natalie by the arm, I said, "Come on, we must get Ri to bed. She thinks we've forgotten about her."

As we walked down the path, Natalie said, "Was your suggestion serious?"

"I think I can work it. I'll speak to Wace. Things have to change. CUFL is unbalanced." The finches fluttered in their cages. The line of sun was over the wall now. All was shadow among our orange trees, and the first bat was flying. I loomed over Ri before she noticed me. Startled, she stared up at me and burst into tears. Many things had to change.

I picked her up in my arms and kissed her cheeks.

Many things had to change. The human condition remained enduringly the same, but many things had to change.

Even the long nights on Earth were only local manifestations of the Sun's eternal daylight. Even the different generations of man had archetypes in common, their slow writhings not merely inconsequential movement but ponderous and deliberate gesture.

So I carried her into the dim house to sleep.

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Theodore Sturgeon is the one author in this issue who also appeared in Volume 1, No. 1 of this magazine ("The Hurkle Is A Happy Beast"—remember?). There are many Sturgeon high points in the past of F&SF (e.g., the Theodore Sturgeon issue, Sept. 1962, the first in a series of these special issues), but the happiest note concerns the future and the present. Theodore Sturgeon is writing sf again—after an absence from the scene that has lasted much too long—and we hope to bring you more of his fiction in the coming months. As for the present, here is the first new Sturgeon story to appear in an sf magazine in many years.

THE MAN WHO LEARNED LOVING

by Theodore Sturgeon

HIS NAME WAS MENSCH; IT once was a small joke between them, and then it became a bitterness. "I wish to God I could have you now the way you were," she said, "moaning at night and jumping up and walking around in the dark and never saying why, and letting us go hungry and not caring how we lived or how we looked. I used to bitch at you for it, but I never minded, not really. I held still for it. I would've, just for always, because with it all you did your own thing, you were a free soul."

"I've always done my own thing," said Mensch, "and I did so tell you why."

She made a disgusted sound. "Who could understand all that?" It was dismissal, an old one; something she had recalled and worked over and failed to understand for years, a thing that made tiredness. "And you used to love people—really love them. Like the time that kid wiped out the fire hydrant and the street-light in front of the house and you fought off the fuzz and the schlock lawyer and the ambulance and everybody, and got him to the hospital and wouldn't let him sign the papers because he was dazed. And turning that cheap hotel upside down to find Victor's false teeth and bring them to him after they put him in jail. And sitting all day in the waiting room the time Mrs. What's-her-name went for her first throat cancer treatment, so you could take her home, you didn't even know her. There wasn't anything you wouldn't do for people."

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"I've always done what I could. I didn't stop."

Scorn. "So did Henry Ford. Andrew Carnegie. The Krupp family. Thousands of jobs, billions in taxes for everybody. I know the stories."

"My story's not quite the same," he said mildly.

Then she said it all, without hate or passion or even much emphasis; she said in a burnt-out voice, "we loved each other and you walked out."

They loved each other. Her name was Fauna; it once was a small joke between them. Fauna the Animal and Mensch the Man, and the thing they had between them. "Sodom is a-cumen in," he misquoted Chaucer. "Lewd sing cuckold," (because she had a husband back there somewhere amongst the harpsichord lessons and the mildewed unfinished hooked rugs and the skeleton of a play and all the other abandoned projects in the attic of her life). She didn't get the reference. She wasn't bright—just loving. She was one of those people who waits for the right thing to come along and drops all others as soon as she finds out they aren't the main one. When someone like that gets the right thing, it's forever, and everyone says, my how you've changed. She hasn't changed.

But then when the right thing comes along, and it doesn't work out, she'll never finish anything again. Never.

They were both very young when they met and she had a little house back in the woods near one of those resort towns that has a reputation for being touristy-artsy-craftsy and actually does have a sprinkling of real artists in and around it. Kooky people are more than tolerated in places like that providing only that a) they attract, or at least do not repel, the tourists and b) they never make any important money. She was a slender pretty girl who liked to be naked under loose floor-length gowns and take care of sick things as long as they couldn't talk—broken-wing birds and philodendrons and the like—and lots of music—lots of *kinds* of music; and cleverly doing things she wouldn't finish until the real thing came along. She had a solid title to the little house and a part-time job in the local frame shop; she was picturesque and undemanding and never got involved in marches and petitions and the like. She just believed in being kind to everyone around her and thought . . . well, that's not quite right. She hadn't ever thought it out all the way, but she *felt* that if you're kind to everyone the kindness will somehow spread over the world like a healing stain, and that's what you do about wars and greed and injus-

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tice. So she was an acceptable, almost approved fixture in the town even when they paved her dirt road and put the lamp-post and fire-hydrant in front of it.

Mensch came into this with long hair and a guitar strapped to his back, a head full of good books and a lot of very serious restlessness. He knew nothing about loving and Fauna taught him better than she knew. He moved in with Fauna the day after she discovered his guitar was tuned like a lute. He had busy hands too, and a way of finishing what he started, yes, and making a dozen more like them—beautifully designed kitchen pads for shopping lists made out of hand-rubbed local woods, which used adding-machine rolls and had a hunk of hacksaw-blade down at the bottom so you could neatly tear off a little or a lot, and authentic reproductions of fireplace bellows and apple-peelers and stuff like that which could be displayed in the shoppes (not stores. they were shoppes) on the village green, and bring in his share. Also he knew about transistors and double-helical gears and eccentric linkages and things like Wankels and fuel-cells. He fiddled around a lot in the back room with magnets and axles and colored fluids of various kinds, and one day he had an idea and began fooling with scissors and cardboard and some metal parts. It was mostly frame and a rotor, but it was made of certain things in a certain way. When he put it together the rotor began to spin, and he suddenly understood it. He made a very slight adjustment and the rotor, which was mostly cardboard, uttered a shrill rising sound and spun so fast that the axle, a ten-penny nail, chewed right through the cardboard bearings and the rotor took off and flew across the room, showering little unglued metal bits. He made no effort to collect the parts, but stood up blindly and walked into the other room. Fauna took one look at him and ran to him and held him: what is it? what's the matter? but he just stood there looking stricken until the tears began rolling down his cheeks. He didn't seem to know it.

That was when he began moaning suddenly in the middle of the night, jumping up and walking around in the dark. When she said years later that he would never tell her why, it was true, and it wasn't, because what he told her was that he had something in his head so important that certain people would kill him to get it, and certain other people would kill him to suppress it, and that he wouldn't tell her what it was because he loved her and didn't want her in danger. She cried a lot and said he didn't trust her, and he said he did, but he wanted to take care of her, not

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throw her to the wolves. He also said—and this is what the moaning and night-walking was all about—that the thing in his head could make the deserts bloom and could feed hungry people all over the world, but that if he let it loose it could be like a plague too, not because of what it was but because of what people would do with it; and the very first person who died because of it would die because of him, and he couldn't bear the idea of that. He really had a choice to make, but before he could make it he had to decide whether the death of one person was too great a price to pay for the happiness and security of millions, and then if the deaths of a thousand would be justified if it meant the end of poverty for all. He knew history and psychology and he had a mathematician's head as well as those cobbler's hands, and he knew damned well what would happen if he took this way or that. For example, he knew where he could unload the idea and all responsibility for it for enough money to keep him and Fauna—and a couple hundred close friends, if it came to that—in total luxury for the rest of their lives; all he would have to do would be to sign it away and see it buried forever in a corporate vault, for there were at least three industrial giants which would urgently bid against one another for the privilege.

Or kill him.

He also thought of making blueprints and scattering millions of copies over cities all over the world, and of finding good ethical scientists and engineers and banding them together into a firm which would manufacture and license the device and use it only for good things. Well you can do that with a new kind of rat-killer or sewing machine, but not with something so potent that it will change the face of the earth, eliminate hunger, smog, and the rape of raw materials—not when it will also eliminate the petrochemical industry (except for dyes and plastics), the electric power companies, the internal combustion engine and everything involved in making it and fuelling it, and even atomc energy for most of its purposes.

Mensch tried his very best to decide not to do anything at all about it, which was the moaning and night-walking interval, and that just wouldn't work—the thing would not let him go. Then he decided what to do, and what he must do in order to do it. His first stop was at the town barbershop.

Fauna held still for this and for his getting a job at Flextronics, the town's light industry, which had Government contracts for small computer parts and which was scorned by the town's art, literary and library segment. The

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regular hours appalled her, and although he acted the same (he certainly didn't look the same) around the house, she became deeply troubled. She had never seen so much money as he brought in every payday, and didn't want to, and for the first time in her life had to get stubborn about patching and improvising and doing without instead of being able to blame poverty for it. The reasons she found now for living that way seemed specious even to her, which only made her stubborn about it, and more of a kook than ever. Then he bought a car, which seemed to her an immorality of sorts.

What tore it was when somebody told her he had gone to the town board meeting, which she had never done, and had proposed that the town pass ordinances against sitting on the grass on the village green, playing musical instruments on town thoroughfares, swimming at the town swimming hole after sundown, and finally, hiring more police. When she demanded an explanation he looked at her sadly for a long time, then would not deny it, would not discuss it, and moved out.

He got a clean room in a very square boarding house near the factory, worked like hell until he got his college credits straightened out, went to night school until he had another degree. He took to hanging around the Legion post on Saturday nights and drank a little beer and bought a lot of whiskey for other people. He learned a whole portfolio of dirty jokes and dispensed them carefully, two-thirds sex, one-third bathroom. Finally he took a leave of absence from his job, which was, by this time, section manager, and moved down the river to a college town where he worked full time on a post-graduate engineering degree while going to night school to study law. The going was very tough around then because he had to pinch every nickel to be able to make it and still keep his pants creased and his brown shoes shiny, which he did. He still found time to join the local church and became a member of the vestry board and a lay preacher, taking as his text the homilys from *Poor Richard's Almanac* and delivering them (as did their author) as if he believed every word.

When it was time he redesigned his device, not with cardboard and glue, but with machined parts that were 70% monkey-puzzle—mechanical motions that cancelled each other, and wiring which energized coils which shorted themselves out. He patented parts and certain groupings of parts, and finally the whole contraption. He then took his degrees and graduate degrees, his published scholarly papers, his patents and his short hair-cut,

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together with a letter of introduction from his pastor, to a bank, and borrowed enough to buy into a failing company which made portable conveyor belts. His device was built into the drive segment, and he went on the road to sell the thing. It sold very well. It should. A six-volt automobile battery would load coal with that thing for a year without needing replacement or recharging, and no wonder, because the loading was being powered by that little black lump in the drive segment, which, though no bigger than a breadbox, and requiring no fuel, would silently and powerfully spin a shaft until the bearings wore out.

It wasn't too long before the competition was buying Mensch's loaders and tearing them down to see where all that obscene efficiency was coming from. The monkey-puzzle was enough to defeat most of them, but one or two bright young men, and a grizzled oldster or so were able to realize that they were looking at something no bigger than a breadbox which would turn a shaft indefinitely without fuel, and to wonder what things would be likely with this gadget under the hood of a car or in the nacelles of aircraft, or pumping water in the desert, or generating light and power 'way back in the hills and jungles without having to build roads or railways or to string powerlines. Some of these men found their way to Mensch. Either he hired them and tied them up tight with ropes of gold and fringe benefits, or had them watched and dissuaded, or discredited, or, if need be, ruined.

Inevitably someone was able to duplicate the Mensch effect, but by that time Mensch had a whole office building full of lawyers with their pencils sharpened and their instructions ready. The shrewd operator who had duplicated the effect, and who had sunk everything he had and could borrow into retooling an engine factory for it, found himself in such a snarl of infringement, torts, ceases-and-desists, and prepaid royalty demands that he sold his plant at cost to Mensch and gratefully accepted a job managing it. And he was only the first.

The military moved in at about this point, but Mensch was ready for them and their plans to take over his patents and holdings as a national resource. He let himself be bunted higher and higher in the chain of command, while his refusals grew stronger and stronger and the threats greater and greater, until he emerged at the top in the company of the civilian who commanded them all. This meeting was brought about by a bishop, for never in all these busy years did Mensch overlook his weekly duty at the church of his choice, nor his

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tithes, nor his donations of time for an occasional Vacation Bible School or picnic or bazaar. And Mensch, on this pinnacle of wealth, power and respectability, was able to show the President the duplicate set of documents he had placed in a Swiss bank, which, on the day his patents were pre-empted by the military, would donate them to research institutes in Albania and points north and east. That was the end of that.

The following year a Mensch-powered car won the Indy. It wasn't as fast as the Granatelli entry; it just voomed around and around the brickyard without making any stops at all. There was, of course, a certain amount of static for a while, but the inevitable end was that the automobile industry capitulated, and with it the fossil-fuel people. Electric light and power had to follow and, as the gas and steam and diesel power sources obsolesce and are replaced by Mensch prime-movers, the atomic plants await their turn.

It was right after the Indianapolis victory that Mensch donated his blueprints to Albania anyway—after all, he had never said he wouldn't—and they showed up about the same time in Hong Kong and quickly reached the mainland. There was a shrill claim from the Soviet Union that the Mensch Effect had been discovered in the 19th century by Siolkovsky, who had set it aside because he was more interested in rockets, but even the Russians couldn't keep that up for long without laughing along with the audience, and they fell to outstripping all other nations in development work. No monkey-puzzle on earth can survive this kind of effort—monkey-puzzles need jungles of patent law to live and thrive—and it was not long before the Soviets (actually, it was a Czech scientist, which is the same thing, isn't it? Well, the Soviets said it was) were able to proclaim that they had improved and refined the device to a simple frame supporting one moving part, the rotor, each made, of course, of certain simple substances which, when assembled, began to work. It was, of course, the same frame and rotor with which Mensch, in terror and tears, had begun his long career, and the Czech, that is, Soviet "refinement" was, like all else, what he had predicted and aimed himself toward.

For now there wasn't a mechanics magazine in the world, nor hardly a tinkerer's workshop anywhere, that didn't begin turning out Mensch rotors. Infringements occurred so widely that even Mensch's skyscraper-full of legal-eagles couldn't have begun to stem the flood. And indeed they did not try, because—

For the second time in modern

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history (the first was an extraordinary man named Kemal Ataturk) a man of true national-dictator stature set his goal, achieved it, and abdicated. It didn't matter one bit to Mensch that the wiser editorialists, with their knowledgeable index fingers placed alongside their noses, were pointing out that he had defeated himself, shatterred his own empire by extending its borders, and that by releasing his patents into the public domain he was making an empty gesture to the inevitable. Mensch knew what he had done, and why, and what other people thought of it just did not matter.

"What does matter," he said to Fauna in her little house by the old fire hydrant and the quaint street-lamp, "is that there isn't a kraal in Africa or a hamlet in Asia that can't pump water and plow land and heat and light its houses by using a power plant simple enough to be built by any competent mechanic anywhere. There are little ones to rock cradles and power toys and big ones to light whole cities. They pull trains and sharpen pencils, and they need no fuel. Already desalted Mediterranean water is pouring into the northern Sahara; there'll be whole new cities there, just as there were five thousand years ago. In ten years the air all over the earth will be measurably cleaner, and already the demand for oil is down so much that offshore drilling is almost completely stopped. 'Have' and 'have-not' no longer means what it once meant, because everyone has access to cheap power. And that's why I did it, don't you see?" He really wanted very much to make her understand.

"You cut your hair," she said bitterly. "You wore those awful shoes and went to church and got college degrees and turned into a —a typhoon."

"Tycoon," he corrected absently. "Ah, but Fauna, listen: I wanted to be listened to. The way to get what I wanted was short hair, was brown shoes, was published post-graduate papers, was the banks and businesses and government and all of those things that were already there for me to use."

"You didn't need all that. I think you just wanted to move things and shake things and be in the newspapers and history books. You could've made your old motor right here in this house and showed it to people and sold it and stayed here and played the lute, and it would have been the same thing."

"No, there you're wrong," said Mensch. "Do you know what kind of a world we live in? We live in a world where, if a man came up with a sure cure for cancer, and if that man were found to be mar-

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ried to his sister, his neighbors would righteously burn down his house and all his notes. If a man built the most beautiful tower in the country, and that man later begins to believe that Satan should be worshipped, they'll blow up his tower. I know a great and moving book written by a woman who later went quite crazy and wrote crazy books, and nobody will read her great one any more. I can name three kinds of mental therapy that could have changed the face of the earth, and in each one the men who found it went on to insane Institutes and so-called religions and made fools of themselves—dangerous fools at that—and now no one will look at their really great early discoveries. Great politicians have been prevented from being great statesmen because they were divorced. And I wasn't going to have the Mensch machine stolen or buried or laughed at and forgotten just because I had long hair and played the lute. You know, it's easy to have long hair and play the lute and be kind to people when everyone else around you is doing it. It's a much harder thing to be the one who does something first, because then you have to pay a price, you get jeered at and they shut you out."

"So you joined them," she accused.

"I used them," he said flatly. "I used every road and path that led to where I was going, no matter who built it or what it was built for."

"And you paid your price," she all but snarled. "Millions in the bank, thousands of people ready to fall on their knees if you snap your fingers. Some price. You could have had love."

He stood up then and looked at her. Her hair was much thinner now, but still long and fine. He reached for it, lifted some. It was white. He let it go.

He thought of fat Biafran babies and clean air and un-polluted beaches, cheaper food, cheaper transportation, cheaper manufacturing and maintenance, more land to lessen the pressures and hysteria during the long slow process of population control. What had moved him to deny himself so much, to rebel, to move and shake and shatter the status quo the way he had, rather than conforming—conforming! —to long hair and a lute? *You could have had love.*

"But I did," he said; and then, knowing she would never, could never understand, he got in his silent fuelless car and left. ◄

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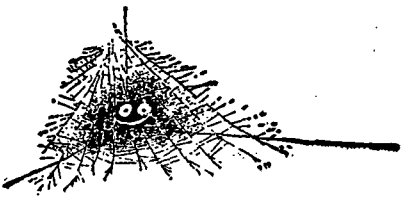
BOOKS



The Dark Corner

Multiplying in the racks at Rexall's, and spreading stealthily over the walls at the corner cigar store, are an increasing number of Black Art tracts, the likes of which, a few years ago, were to be found only in the dustiest recesses of bookstores specializing in the occult, or in the locked stacks of libraries, such as the one at Miskatonic University. Now, for a few pennies, quite a few, actually, prices being what they are even in the paperback field, the merest child can pick up a book giving him detailed instructions on how to kill his enemies, real or imagined, by means of thought waves. If the tot's interests run along milder lines, he will find grimoires on such arcane divertissements as tasseography, cartography, numerology, cartomancy, colorology, radiesthesia, oneiromancy, and metoposcopy, just to name a few, and God knows what he will do with them. His parents are by now alerted to be on the sniff for fumes of glue and marijuana, but what will they make of the pentagrams traced in sulphur on his playroom floor, or the doll that looks like papa melting in the oven?

A happy side effect of this flood of necromantic know-how is an accompanying upsurge in the availability of the sort of fiction this department treasures, namely that of the macabre and supernatural. Of course, you and I know better, but I have a feeling that the publishers and common browsers find it difficult to distinguish between fact, so to speak, and fiction in this area, and when the one strikes the general fancy, the other tags along. Our good Doctor Asimov may be discouraged to find a reasoned work of his on atomic structure sandwiched between a treatise on tea leaf reading and one extolling the virtues of an herbal cancer cure, but

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the devotee of the grim fantastic can only rub his hands and chuckle at the sudden abundance of his favorite reading matter.

Avon has brought out a number of spooky books that I think of as the Harry Garrido series because Harry Garrido has done the covers for them all, and all are so much alike that from a distance—say one foot—you'd swear they were the same. It's smudgy red in the background, see? and has a strong diagonal running from the lower left to the upper right corner, and, at the top of the diagonal, there's this glowy thing. The kick-off in the series is THE PEDESTAL (Avon, 60¢), a novel by George Lanning which takes the classic suburbia themes of flat sex and all-around disenchantment and mixes them with a bit of M. R. Jamesian horror. It has some nice moments, but the Awful Thing and the rest of the story don't fuse to my satisfaction, and, thanks to Harry Garrido, you know what's going to happen before you open the book. Another is called NIGHT OF THE VAMPIRE (by Raymond Giles, Avon, 60¢), and it is an unabashed romp, as the title suggests. It involves a diabolic coven, horrid monsters, and it is fun if you don't mind cardboardish characters, a creaking plot, and a hero named Duffy Johnson.

Richard Matheson's novel of the early fifties about a man with an unwanted wild talent, A STIR OF ECHOES (Avon, 60¢), doesn't quite make it into the sixties for me, but I point it out for those interested. The latest of the series, an anthology edited by Charles M. Collins, A WALK WITH THE BEAST (Avon, 60¢), has some tasty items in it, and some of them may be new to you as they were to me. I enjoyed very much the bulk of a story by Nugent Barker, *Curious Adventure of Mr. Bond,* which is a variation of the deadly inn theme, but I wish he had stopped it a little before he did. *Count Szolnok's Robots* takes an old-timey golemish approach to the mechanical man idea and has a nicely repulsive feel. And there is a very crawly item by William Wood called *One of the Dead.*

Leslie H. Whitten's PROGENY OF THE ADDER (Ace, 60¢), takes an unusual tack by having, as its menace, a fellow who isn't *really* a vampire, understand, but who can, nevertheless, hypnotize his victims with a glance, drink quarts of blood, flatten dozens of attackers in seconds, and otherwise carry on like Count Dracula. There are some wild scenes, the book is nothing if not action-packed, and the repulsiveness of the ghastly lunatic is mercilessly revealed, stench and all; the problem is that Mr. Whitten's vampire is altogether too much like the genuine article for the premise of the book.

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The same author takes up the same basic theme in MOON OF THE WOLF (Ace, 60¢), and much more successfully. This time the fiend is not really a werewolf, but the character is far more believable, as is the world he moves in, and his exploits manage to stay pretty closely within the horribly possible. The whole book is a remarkable improvement over his first, and it will be fun to see what Leslie Whitten does next.

A FINE AND PRIVATE PLACE (Ballantine Books, 95¢) by Peter S. Beagle is a whacky and gentle fantasy about a number of creatures, living and dead, who work their way through various personal problems in the precincts of the Yorkchester Cemetery, a spreading establishment near New York City about the size of Central Park. My favorite character in the book is a talking raven, which is unusual because talking animals of any description usually irk me. I prefer, for example, the Road Runner and the Coyote to Bugs Bunny and Porky Pig, although there is a serious flaw in my prejudices because the Road Runner beeps, and I *know* no road runner beeps. I think the main reason I liked the raven is because he has a sour disposition while all about him are either mystically calm or sweetly philosophic. The book, with its long, rambling discources on Life, reminded me very much of certain plays of the thirties; it exudes a kind of wistful humanism which I found sometimes touching, sometimes irritating. THE LAST UNICORN (Ballantine Books, 95¢), another book by the same author, takes place Once Upon a Time in the days when there were unicorns and traveling magicians and magical castles, and like that. The story is full of fantastical imagery and fabulous creatures, and Mr. Beagle describes it all very poetically, but, as I worked my way through the story, I found myself growing more and more impatient with the softly sad discourse of his characters, and, as their pithy aphorisms grew ever more numerous, something perfectly rotten in me yearned to see a dragon crawl out from behind a pile of rocks and give them all a good, swift clout.

HAUNTINGS AND HORRORS, TEN GRISLY TALES (Berkley Medallion Books, 60¢) is another in the series of anthologies edited by Alden H. Norten with commentary by Sam Moskowitz. It's generously dedicated to August Derleth, in spite of the obvious fact that the same August Derleth is one of the main problems of the likes of Mssrs. Norten and Moskowitz. The Sauk City Sleuth, bless him for his enthusiastic thoroughness, has done such a good job of researching the field that it is next to impossible to unearth a tidbit of horror which is

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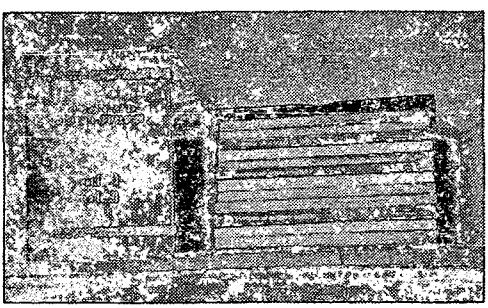
both fresh and first rate. If you come across a lovely tale of grue in some moldering book or pulp, the chances are an iodine test will reveal Mr. Derleth's prints on every page. Norten and Moskowitz, undaunted, burrow on, and I'm glad they do. The finds in this collection are, mainly, quaint, turn of the century stuff. There is, for example, the almost ungettable *Maker of Moons* by Robert W. Chambers, and a story by Julian Hawthorne, Nathaniel's son, and one by the architect, Ralph Adams Cram. They are best savored in a padded velvet smoking jacket with a decanter of mellow port close by the humidor.

—GAHAN WILSON



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Short fiction by Philip Dick is a rare event these days, mostly because of his concentration on novels, the most recent of which is UBIK, *(Doubleday). His most well-known book is probably the brilliant parallel-world story,* THE MAN IN THE HIGH CASTLE. *Mr. Dick's first story here since "We Can Remember It For You Wholesale" (April 1966) is about Garson Poole, who was not exactly human, but who possessed an overwhelmingly human—and dangerous—sense of curiosity.*

THE ELECTRIC ANT

by Philip K. Dick

AT FOUR-FIFTEEN IN THE AFternoon, T.S.T., Garson Poole woke up in his hospital bed, knew that he lay in a hospital bed in a three-bed ward and realized in addition two things: that he no longer had a right hand and that he felt no pain.

They have given me a strong analgesic, he said to himself as he stared at the far wall with its window showing downtown New York. Webs in which vehicles and peds darted and wheeled glimmered in the late afternoon sun, and the brilliance of the aging light pleased him. It's not yet out, he thought. And neither am I.

A fone lay on the table beside his bed; he hesitated, then picked it up and dialed for an outside line. A moment later he was faced by Louis Danceman, in charge of Tri-Plan's activities while he, Garson Poole, was elsewhere.

"Thank god you're alive," Danceman said, seeing him; his big, fleshy face with its moon's surface of pock marks flattened with relief. "I've been calling all—"

"I just don't have a right hand," Poole said.

"But you'll be okay. I mean, they can graft another one on."

"How long have I been here?" Poole said. He wondered where the nurses and doctors had gone to; why weren't they clucking and

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fussing about him making a call?

"Four days," Danceman said. "Everything here at the plant is going splunkishly. In fact we've splunked orders from three separate police systems, all here on Terra. Two in Ohio, one in Wyoming. Good solid orders, with one third in advance and the usual three-year lease-option."

"Come and get me out of here," Poole said.

"I can't get you out until the new hand—"

"I'll have it done later." He wanted desperately to get back to familiar surroundings; memory of the mercantile squib looming grotesquely on the pilot screen careened at the back of his mind; if he shut his eyes he felt himself back in his damaged craft as it plunged from one vehicle to another, piling up enormous damage as it went. The kinetic sensations . . . he winced, recalling them. I guess I'm lucky, he said to himself.

"Is Sarah Benton there with you?" Danceman asked.

"No." Of course; his personal secretary—if only for job considerations—would be hovering close by, mothering him in her jejune, infantile way. All heavy-set women like to mother people, he thought. And they're dangerous; if they fall on you they can kill you. "Maybe that's what happened to me," he said aloud. "Maybe Sarah fell on my squib."

"No, no; a tie rod in the steering fin of your squib split apart during the heavy rush-hour traffic and you—"

"I remember." He turned in his bed as the door of the ward opened; a white-clad doctor and two blue-clad nurses appeared, making their way toward his bed. "I'll talk to you later," Poole said, and hung up the fone. He took a deep, expectant breath.

"You shouldn't be foning quite so soon," the doctor said as he studied his chart. "Mr. Garson Poole, owner of Tri-Plan Electronics. Maker of random ident darts that track their prey for a circle-radius of a thousand miles, responding to unique enceph wave patterns. You're a successful man, Mr. Poole. But, Mr. Poole, you're not a man. You're an electric ant."

"Christ," Poole said, stunned.

"So we can't really treat you here, now that we've found out. We knew, of course, as soon as we examined your injured right hand; we saw the electronic components and than we made torso x-rays and of course they bore out our hypothesis."

"What," Poole said, "is an 'electric ant'?" But he knew; he could decipher the term.

A nurse said, "An organic robot."

"I see," Poole said. Frigid perspiration rose to the surface of his skin, across all his body.

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"You didn't know," the doctor said.

"No." Poole shook his head.

The doctor said, "We get an electric ant every week or so. Either brought in here from a squib accident—like yourself—or one seeking voluntary admission . . . one who, like yourself, has never been told, who has functioned along side humans, believing himself—itself—human. As to your hand—" He paused.

"Forget my hand," Poole said savagely.

"Be calm." The doctor leaned over him, peered acutely down into Poole's face. "We'll have a hospital boat convey you over to a service facility where repairs, or replacement, on your hand can be made at a reasonable expense, either to yourself, if you're self-owned, or to your owners, if such there are. In any case you'll be back at your desk at Tri-Plan, functioning just as before."

"Except," Poole said, "now I know." He wondered if Danceman or Sarah or any of the others at the office knew. Had they—or one of them—purchased him? Designed him? A figurehead, he said to himself; that's all I've been. I must never really have run the company; it was a delusion implanted in me when I was made . . . along with the delusion that I am human and alive.

"Before you leave for the repair facility," the doctor said, "could you kindly settle your bill at the front desk?"

Poole said acidly, "How can there be a bill if you don't treat ants here?"

"For our services," the nurse said. "Up until the point we knew."

"Bill me," Poole said, with furious, impotent anger. "Bill my firm." With massive effort he managed to sit up; his head swimming, he stepped haltingly from the bed and onto the floor. "I'll be glad to leave here," he said as he rose to a standing position. "And thank you for your humane attention."

"Thank you, too, Mr. Poole," the doctor said. "Or rather I should say just Poole."

At the repair facility he had his missing hand replaced.

It proved fascinating, the hand; he examined it for a long time before he let the technicians install it. On the surface it appeared organic—in fact, on the surface, it was. Natural skin covered natural flesh, and true blood filled the veins and capillaries. But, beneath that, wires and circuits, miniaturized components, gleamed . . . looking deep into the wrist he saw surge gates, motors, multi-stage valves, all very small. Intricate. And—the hand cost forty frogs. A week's salary, insofar as he drew it from the company payroll.

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"Is this guaranteed?" he asked the technicians as they fused the "bone" section of the hand to the balance of his body.

"Ninety days, parts and labor," one of the technicians said. "Unless subjected to unusual or intentional abuse."

"That sounds vaguely suggestive," Pool said.

The technician, a man—all of them were men—said, regarding him keenly, "You've been posing?"

"Unintentionally," Poole said.

"And now it's intentional?"

Poole said, "Exactly."

"Do you know why you never guessed? There must have been signs . . . clickings and whirrings from inside you, now and then. You never guessed because you were programed not to notice. You'll now have the same difficulty finding out why you were built and for whom you've been operating."

"A slave," Poole said. "A mechanical slave."

"You've had fun."

"I've lived a good life," Poole said. "I've worked hard."

He paid the facility its forty frogs, flexed his new fingers, tested them out by picking up various objects such as coins, then departed. Ten minutes later he was aboard a public carrier, on his way home. It had been quite a day.

At home, in his one-room apartment, he poured himself a shot of Jack Daniel's Purple Label—sixty years old—and sat sipping it, meanwhile gazing through his sole window at the building on the opposite side of the street. Shall I go to the office? he asked himself. If so, why? If not, why? Choose one. Christ, he thought, it undermines you, knowing this. I'm a freak, he realized. An inanimate object mimicking an animate one. But—he felt alive. Yet . . . he felt differently, now. About himself. Hence about everyone, especially Danceman and Sarah, everyone at Tri-Plan.

I think I'll kill myself, he said to himself. But I'm probably programed not to do that; it would be a costly waste which my owner would have to absorb. And he wouldn't want to.

Programed. In me somewhere, he thought, there is a matrix fitted in place, a grid screen that cuts me off from certain thoughts, certain actions. And forces me into others. I am not free. I never was, but now I know it; that makes it different.

Turning his window to opaque, he snapped on the overhead light, carefully set about removing his clothing, piece by piece. He had watched carefully as the technicians at the repair facility had attached his new hand: he had a rather clear idea, now, of how his body had been assembled. Two major panels, one in each thigh; the technicians had removed the

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panels to check the circuit complexes beneath. If I'm programed, he decided, the matrix probably can be found there.

The maze of circuitry baffled him. I need help, he said to himself. Let's see . . . what's the fone code for the class BBB computer we hire at the office?

He picked up the fone, dialed the computer at its permanent location in Boise, Idaho.

"Use of this computer is prorated at a five frogs per minute basis," a mechanical voice from the fone said. "Please hold your mastercreditchargeplate before the screen."

He did so.

"At the sound of the buzzer you will be connected with the computer," the voice continued. "Please query it as rapidly as possible, taking into account the fact that its answer will be given in terms of a microsecond, while your query will—" He turned the sound down, then. But quickly turned it up as the blank audio input of the computer appeared on the screen. At this moment the computer had become a giant ear, listening to him—as well as fifty thousand other queriers throughout Terra.

"Scan me visually," he instructed the computer. "And tell me where I will find the programing mechanism which controls my thoughts and behavior." He waited. On the fone's screen a great active eye, multi-lensed, peered at him; he displayed himself for it, there in his one-room apartment.

The computer said, "Remove your chest panel. Apply pressure at your breastbone and then ease outward."

He did so. A section of his chest came off; dizzily, he set it down on the floor.

"I can distinguish control modules," the computer said, "but I can't tell which—" It paused as its eye roved about on the fone screen. "I distinguish a roll of punched tape mounted above your heart mechanism. Do you see it?" Poole craned his neck, peered. He saw it, too. "I will have to sign off," the computer said. "After I have examined the data available to me I will contact you and give you an answer. Good day." The screen died out.

I'll yank the tape out of me, Poole said to himself. Tiny . . . no larger than two spools of thread, with a scanner mounted between the delivery drum and the take-up drum. He could not see any sign of motion; the spools seemed inert. They must cut in as override, he reflected, when specific situations occur. Override to my encephalic processes. And they've been doing it all my life.

He reached down, touched the delivery drum. All I have to do is tear this out, he thought, and—

The fone screen relit. "Master-

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creditchargeplate number 3-BNX-882-HQR446-T," the computer's voice came. "This is BBB-307DR recontacting you in response to your query of sixteen seconds lapse, November 4, 1992. The punched tape roll above your heart mechanism is not a programing turret but is in fact a reality-supply construct. All sense stimuli received by your central neurological system emanate from that unit and tampering with it would be risky if not terminal." It added, "You appear to have no programing circuit. Query answered. Good day." It flicked off.

Poole, standing naked before the fone screen, touched the tape drum once again, with calculated, enormous caution. I see, he thought wildly. Or do I see? This unit—

If I cut the tape, he realized, my world will disappear. Reality will continue for others, but not for me. Because my reality, my universe, is coming to me from this minuscule unit. Fed into the scanner and then into my central nervous system as it snailishly unwinds.

It has been unwinding for years, he decided.

Getting his clothes, he redressed, seated himself in his big armchair—a luxury imported into his apartment from Tri-Plan's main offices—and lit a tobacco cigarette. His hands shook as he laid down his initialed lighter; leaning back, he blew smoke before himself, creating a nimbus of gray.

I have to go slowly, he said to himself. What am I trying to do? Bypass my programing? But the computer found no programing circuit. Do I want to interfere with the reality tape? And if so, *why?*

Because, he thought, if I control that, I control reality. At least so far as I'm concerned. My subjective reality . . . but that's all there is. Objective reality is a synthetic construct, dealing with a hypothetical universalization of a multitude of subjective realities.

My universe is lying within my fingers, he realized. If I can just figure out how the damn thing works. All I set out to do originally was to search for and locate my programing circuit so I could gain true homeostatic functioning: control of myself. But with this—

With this he did not merely gain control of himself; he gained control over everything.

And this sets me apart from every human who ever lived and died, he thought somberly.

Going over to the fone he dialed his office. When he had Danceman on the screen he said briskly, "I want you to send a complete set of microtools and enlarging screen over to my apartment. I have some microcircuitry to work on." Then he broke the connection, not wanting to discuss it.

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A half hour later a knock sounded on his door. When he opened up he found himself facing one of the shop foremen, loaded down with microtools of every sort. "You didn't say exactly what you wanted," the foreman said, entering the apartment. "So Mr. Danceman had me bring everything."

"And the enlarging-lens system?"

"In the truck, up on the roof."

Maybe what I want to do, Poole thought, is die. He lit a cigarette, stood smoking and waiting as the shop foreman lugged the heavy enlarging screen, with its power-supply and control panel, into the apartment. This is suicide, what I'm doing here. He shuddered.

"Anything wrong, Mr. Poole?" the shop foreman said as he rose to his feet, relieved of the burden of the enlarging-lens system. "You must still be rickety on your pins from your accident."

"Yes," Poole said quietly. He stood tautly waiting until the foreman left.

Under the enlarging-lens system the plastic tape assumed a new shape: a wide track along which hundreds of thousands of punch-holes worked their way. I thought so, Poole thought. Not recorded as charges on a ferrous oxide layer but actually punched-free slots.

Under the lens the strip of tape visibly oozed forward. Very slowly, but it did, at uniform velocity, move in the direction of the scanner.

The way I figure it, he thought, is that the punched holes are *on* gates. It functions like a player piano; solid is no, punch-hole is yes. How can I test this?

Obviously by filling in a number of the holes.

He measured the amount of tape left on the delivery spool, calculated—at great effort—the velocity of the tape's movement, and then came up with a figure. If he altered the tape visible at the in-going edge of the scanner, five to seven hours would pass before that particular time period arrived. He would in effect be painting out stimuli due a few hours from now.

With a microbrush he swabbed a large—relatively large—section of tape with opaque varnish . . . obtained from the supply kit accompanying the microtools. I have smeared out stimuli for about half an hour, he pondered. Have covered at least a thousand punches.

It would be interesting to see what change, if any, overcame his environment, six hours from now.

Five and a half hours later he sat at Krackter's, a superb bar in Manhattan, having a drink with Danceman.

"You look bad," Danceman said.

"I am bad," Poole said. He fin-

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ished his drink, a Scotch sour, and ordered another.

"From the accident?"

"In a sense, yes."

Danceman said, "Is it—something you found out about yourself?"

Raising his head, Poole eyed him in the murky light of the bar. "Then you know."

"I know," Danceman said, "that I should call you 'Poole' instead of 'Mr. Poole.' But I prefer the latter, and will continue to do so."

"How long have you known?" Poole said.

"Since you took over the firm. I was told that the actual owners of Tri-Plan, who are located in the Prox System, wanted Tri-Plan run by an electric ant whom they could control. They wanted a brilliant and forceful—"

"The real owners?" This was the first he had heard about that. "We have two thousand stockholders. Scattered everywhere."

"Marvis Bey and her husband Ernan, on Prox 4, control fifty-one percent of the voting stock. This has been true from the start."

"Why didn't I know?"

"I was told not to tell you. You were to think that you yourself made all company policy. With my help. But actually I was feeding you what the Beys fed to me."

"I'm a figurehead," Poole said.

"In a sense, yes." Danceman nodded. "But you'll always be 'Mr. Poole' to me."

A section of the far wall vanished. And with it, several people at tables nearby. And—

Through the big glass side of the bar, the skyline of New York City flickered out of existence.

Seeing his face, Danceman said, "What is it?"

Poole said hoarsely, "Look around. Do you see any changes?"

After looking around the room, Danceman said, "No. What like?"

"You still see the skyline?"

"Sure. Smoggy as it is. The lights wink—"

"Now I know," Poole said. He had been right; every punch-hole covered up meant the disappearance of some object in his reality world. Standing, he said, "I'll see you later, Danceman. I have to get back to my apartment; there's some work I'm doing. Goodnight." He strode from the bar and out onto the street, searching for a cab.

No cabs.

Those, too, he thought. I wonder what else I painted over. Prostitutes? Flowers? Prisons?

There, in the bar's parking lot, Danceman's squib. I'll take that, he decided. There are still cabs in Danceman's world; he can get one later. Anyhow it's a company car, and I hold a copy of the key.

Presently he was in the air, turning toward his apartment.

New York City had not returned. To the left and right vehicles and buildings, streets, ped-runners, signs . . . and in

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the center nothing. How can I fly into that? he asked himself. I'd disappear.

Or would I? He flew toward the nothingness.

Smoking one cigarette after another he flew in a circle for fifteen minutes . . . and then, soundlessly, New York reappeared. He could finish his trip. He stubbed out his cigarette (a waste of something so valuable) and shot off in the direction of his apartment.

If I insert a narrow opaque strip, he pondered as he unlocked his apartment door, I can—

His thoughts ceased. Someone sat in his living room chair, watching a captain kirk on the TV. "Sarah," he said, nettled.

She rose, well-padded but graceful. "You weren't at the hospital, so I came here. I still have that key you gave me back in March after we had that awful argument. Oh . . . you look so depressed." She came up to him, peeped into his face anxiously. "Does your injury hurt that badly?"

"It's not that." He removed his coat, tie, shirt, and then his chest panel; kneeling down he began inserting his hands into the microtool gloves. Pausing, he looked up at her and said, "I found out I'm an electric ant. Which from one standpoint opens up certain possibilities, which I am exploring now." He flexed his fingers and, at the far end of the left waldo, a micro screwdriver moved, magnified into visibility by the enlarging-lens system. "You can watch," he informed her. "If you so desire."

She had begun to cry.

"What's the matter?" he demanded savagely, without looking up from his work.

"I—it's just so sad. You've been such a good employer to all of us at Tri-Plan. We respect you so. And now it's all changed."

The plastic tape had an unpunched margin at top and bottom; he cut a horizontal strip, very narrow, then, after a moment of great concentration, cut the tape itself four hours away from the scanning head. He then rotated the cut strip into a right-angle piece in relation to the scanner, fused it in place with a micro heat element, then reattached the tape reel to its left and right sides. He had, in effect, inserted a dead twenty minutes into the unfolding flow of his reality. It would take effect—according to his calculations—a few minutes after midnight.

"Are you fixing yourself?" Sarah asked timidly.

Poole said, "I'm freeing myself." Beyond this he had several other alterations in mind. But first he had to test his theory; blank, unpunched tape meant no stimuli, in which case the *lack* of tape . . .

"That look on your face," Sarah said. She began gathering up her purse, coat, rolled-up aud-vid mag-

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azine. "I'll go; I can see how you feel about finding me here."

"Stay," he said. "I'll watch the captain kirk with you." He got into his shirt. "Remember years ago when there were—what was it? —twenty or twenty-two TV channels? Before the government shut down the independents?"

She nodded.

"What would it have looked like," he said, "if this TV set projected all channels onto the cathode ray screen *at the same time*? Could we have distinguished anything, in the mixture?"

"I don't think so."

"Maybe we could learn to. Learn to be selective; do our own job of perceiving what we wanted to and what we didn't. Think of the possibilities, if our brain could handle twenty images at once; think of the amount of knowledge which could be stored during a given period. I wonder if the brain, the human brain—" He broke off. "The human brain couldn't do it," he said, presently, reflecting to himself. "But in theory a quasi-organic brain might."

"Is that what you have?" Sarah asked.

"Yes," Poole said.

They watched the captain kirk to its end, and then they went to bed. But Poole sat up against his pillows, smoking and brooding. Beside him, Sarah stirred restlessly, wondering why he did not turn off the light.

Eleven-fifty. It would happen anytime, now.

"Sarah," he said, "I want your help. In a very few minutes something strange will happen to me. It won't last long, but I want you to watch me carefully. See if I—" He gestured. "Show any changes. If I seem to go to sleep, or if I talk nonsense, or—" He wanted to say, if I disappear. But he did not. "I won't do you any harm, but I think it might be a good idea if you armed yourself. Do you have your anti-mugging gun with you?"

"In my purse." She had become fully awake now; sitting up in bed, she gazed at him with wild fright, her ample shoulders tanned and freckled in the light of the room.

He got her gun for her.

The room stiffened into paralyzed immobility. Then the colors began to drain away. Objects diminished until, smoke-like, they flitted away into shadows. Darkness filmed everything as the objects in the room became weaker and weaker.

The last stimuli are dying out, Poole realized. He squinted, trying to see. He made out Sarah Benton, sitting in the bed: a two-dimensional figure that doll-like had been propped up, there to fade and dwindle. Random gusts of dematerialized substance eddied about in unstable clouds; the ele-

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ments collected, fell apart, then collected once again. And then the last heat, energy and light dissipated; the room closed over and fell into itself, as if sealed off from reality. And at that point absolute blackness replaced everything, space without depth, not nocturnal but rather stiff and unyielding. And in addition he heard nothing.

Reaching, he tried to touch something. But he had nothing to reach with. Awareness of his own body had departed along with everything else in the universe. He had no hands, and even if he had, there would be nothing for them to feel.

I am still right about the way the damn tape works, he said to himself, using a nonexistent mouth to communicate an invisible message.

Will this pass in ten minutes? he asked himself. Am I right about that, too? He waited . . . but knew intuitively that his time sense had departed with everything else. I can only wait, he realized. And hope it won't be long.

To pace himself, he thought, I'll make up an encyclopedia; I'll try to list everything that begins with an "a." Let's see. He pondered. Apple, automobile, acksetron, atmosphere, Atlantic, tomato aspic, advertising—he thought on and on, categories slithering through his fright-haunted mind.

All at once light flickered on.

He lay on the couch in the living room, and mild sunlight spilled in through the single window. Two men bent over him, their hands full of tools. Maintenance men, he realized. They've been working on me.

"He's conscious," one of the technicians said. He rose, stood back; Sarah Benton, dithering with anxiety, replaced him.

"Thank god!" she said, breathing wetly in Poole's ear. "I was so afraid; I called Mr. Danceman finally about—"

"What happened?" Poole broke in harshly. "Start from the beginning and for god's sake speak slowly. So I can assimilate it all."

Sarah composed herself, paused to rub her nose, and then plunged on nervously, "You passed out. You just lay there, as if you were dead. I waited until two-thirty and you did nothing. I called Mr. Danceman, waking him up unfortunately, and he called the electric-ant maintenance—I mean, the organic-roby maintenance people, and these two men came about four forty-five, and they've been working on you ever since. It's now six fifteen in the morning. And I'm very cold and I want to go to bed; I can't make it in to the office today; I really can't." She turned away, sniffling. The sound annoyed him.

One of the uniformed maintenance men said, "You've been

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playing around with your reality tape."

"Yes," Poole said. Why deny it? Obviously they had found the inserted solid strip. "I shouldn't have been out that long," he said. "I inserted a ten minute strip only."

"It shut off the tape transport," the technician explained. "The tape stopped moving forward; your insertion jammed it, and it automatically shut down to avoid tearing the tape. Why would you want to fiddle around with that? Don't you know what you could do?"

"I'm not sure," Poole said.

"But you have a good idea."

Poole said acridly, "That's why I'm doing it."

"Your bill," the maintenance man said, "is going to be ninety-five frogs. Payable in installments, if you so desire."

"Okay," he said; he sat up groggily, rubbed his eyes and grimaced. His head ached and his stomach felt totally empty.

"Shave the tape next time," the primary technician told him. "That way it won't jam. Didn't it occur to you that it had a safety factor built into it? So it would stop rather than—"

"What happens," Poole interrupted, his voice low and intently careful, "if no tape passes under the scanner? No tape—nothing at all. The photocell shining upward without impedance?"

The technicians glanced at each other. One said, "All the neuro circuits jump their gaps and short out."

"Meaning what?" Poole said.

"Meaning it's the end of the mechanism."

Poole said, "I've examined the circuit. It doesn't carry enough voltage to do that. Metal won't fuse under such slight loads of current, even if the terminals are touching. We're talking about a millionth of a watt along a cesium channel perhaps a sixteenth of an inch in length. Let's assume there are a billion possible combinations at one instant arising from the punch-outs on the tape. The total output isn't cumulative; the amount of current depends on what the battery details for that module, and it's not much. With all gates open and going."

"Would we lie?" one of the technicians asked wearily.

"Why not?" Poole said. "Here I have an opportunity to experience everything. Simultaneously. To know the universe in its entirety, to be momentarily in contact with all reality. Something that no human can do. A symphonic score entering my brain outside of time, all notes, all instruments sounding at once. And all symphonies. Do you see?"

"It'll burn you out," both technicians said, together.

"I don't think so," Poole said.

Sarah said, "Would you like a cup of coffee, Mr. Poole?"

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"Yes," he said; he lowered his legs, pressed his cold feet against the floor, shuddered. He then stood up. His body ached. They had me lying all night on the couch, he realized. All things considered, they could have done better than that.

At the kitchen table in the far corner of the room, Garson Poole sat sipping coffee across from Sarah. The technicians had long since gone.

"You're not going to try any more experiments on yourself, are you?" Sarah asked wistfully.

Poole grated, "I would like to control time. To reverse it." I will cut a segment of tape out, he thought, and fuse it in upside down. The causal sequences will then flow the other way. Thereupon I will walk backward down the steps from the roof field, back up to my door, push a locked door open, walk backward to the sink, where I will get out a stack of dirty dishes. I will seat myself at this table before the stack, fill each dish with food produced from my stomach . . . I will then transfer the food to the refrigerator. The next day I will take the food out of the refrigerator, pack it in bags, carry the bags to a supermarket, distribute the food here and there in the store. And at last, at the front counter, they will pay me money for this, from their cash register. The food will be packed with other food in big plastic boxes, shipped out of the city into the hydroponic plants on the Atlantic, there to be joined back to trees and bushes or the bodies of dead animals or pushed deep into the ground. But what would all that prove? A video tape running backward . . . I would know no more than I know now, which is not enough.

What I want, he realized, is ultimate and absolute reality, for one microsecond. After that it doesn't matter, because all will be known; nothing will be left to understand or see.

I might try one other change, he said to himself. Before I try cutting the tape. I will prick new punch-holes in the tape and see what presently emerges. It will be interesting because I will not know what the holes I make mean.

Using the tip of a microtool, he punched several holes, at random, on the tape. As close to the scanner as he could manage . . . he did not want to wait.

"I wonder if you'll see it," he said to Sarah. Apparently not, insofar as he could extrapolate. "Something may show up," he said to her. "I just want to warn you; I don't want you to be afraid."

"Oh dear," Sarah said tinnily.

He examined his wristwatch. One minute passed, then a second, a third. And then—

In the center of the room appeared a flock of green and black

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ducks. They quacked excitedly, rose from the floor, fluttered against the ceiling in a dithering mass of feathers and wings and frantic in their vast urge, their instinct, to get away.

"Ducks," Poole said, marveling. "I punched a hole for a flight of wild ducks."

Now something else appeared. A park bench with an elderly, tattered man seated on it, reading a torn, bent newspaper. He looked up, dimly made out Poole, smiled briefly at him with badly made dentures, and then returned to his folded-back newspaper. He read on.

"Do you see him?" Poole asked Sarah. "And the ducks." At that moment the ducks and the park bum disappeared. Nothing remained of them. The interval of their punch-holes had quickly passed.

"They weren't real," Sarah said. "Were they? So how—"

"You're not real," he told Sarah. "You're a stimulus-factor on my reality tape. A punch-hole that can be glazed over. Do you also have an existence in another reality tape, or one in an objective reality?" He did not know; he couldn't tell. Perhaps Sarah did not know, either. Perhaps she existed in a thousand reality tapes; perhaps on every reality tape ever manufactured. "If I cut the tape," he said, "you will be everywhere and nowhere. Like everything else in the universe. At least as far as I am aware of it."

Sarah faltered, "I am real."

"I want to know you completely," Poole said. "To do that I must cut the tape. If I don't do it now, I'll do it some other time; it's inevitable that eventually I'll do it." So why wait? he asked himself. And there is always the possibility that Danceman has reported back to my maker, that they will be making moves to head me off. Because, perhaps, I'm endangering their property—myself.

"You make me wish I had gone to the office after all," Sarah said, her mouth turned down with dimpled gloom.

"Go," Poole said.

"I don't want to leave you alone."

"I'll be fine," Poole said.

"No, you're not going to be fine. You're going to unplug yourself or something, kill yourself because you've found out you're just an electric ant and not a human being."

He said, presently, "Maybe so." Maybe it boiled down to that.

"And I can't stop you," she said.

"No." He nodded in agreement.

"But I'm going to stay," Sarah said. "Even if I can't stop you. Because if I do leave and you do kill yourself, I'll always ask myself for the rest of my life what would have happened if I had stayed. You see?"

Again he nodded.

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"Go ahead," Sarah said.

He rose to his feet. "It's not pain I'm going to feel," he told her. "Although it may look like that to you. Keep in mind the fact that organic robots have minimal pain-circuits in them. I will be experiencing the most intense—"

"Don't tell me any more," she broke in. "Just do it if you're going to, or don't do it if you're not."

Clumsily—because he was frightened—he wriggled his hands into the microglove assembly, reached to pick up a tiny tool: a sharp cutting blade. "I am going to cut a tape mounted inside my chest panel," he said, as he gazed through the enlarging-lens system. "That's all." His hand shook as it lifted the cutting blade. In a second it can be done, he realized. All over. And—I will have time to fuse the cut ends of tape back together, he realized. A half hour at least. If I change my mind.

He cut the tape.

Staring at him, cowering, Sarah whispered, "Nothing happened."

"I have thirty or forty minutes." He reseated himself at the table, having drawn his hands from the gloves. His voice, he noticed, shook; undoubtedly Sarah was aware of it, and he felt anger at himself, knowing that he had alarmed her. "I'm sorry," he said, irrationally; he wanted to apologize to her. "Maybe you ought to leave," he said in panic; again he stood up. So did she, reflexively, as if imitating him; bloated and nervous she stood there palpitating. "Go away," he said thickly. "Back to the office where you ought to be. Where we both ought to be." I'm going to fuse the tape-ends together, he told himself; the tension is too great for me to stand.

Reaching his hands toward the gloves he groped to pull them over his straining fingers. Peering into the enlarging screen, he saw the beam from the photoelectric gleam upward, pointed directly into the scanner; at the same time he saw the end of the tape disappearing under the scanner . . . he saw this, understood it; I'm too late, he realized. It has passed through. God, he thought, help me. It has begun winding at a rate greater than I calculated. So it's *now* that—

He saw apples and cobblestones and zebras. He felt warmth, the silky texture of cloth; he felt the ocean lapping at him and a great wind, from the north, plucking at him as if to lead him somewhere. Sarah was all around him, so was Danceman, New York glowed in the night, and the squibs about him scuttled and bounced through night skies and daytime and flooding and drought. Butter relaxed into liquid on his tongue, and at the same time hideous odors and tastes assailed him: the bitter presence of poisons and lemons and blades of summer grass. He drowned; he fell; he lay in the arms of a woman in a vast

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white bed which at the same time dinned shrilly in his ear: the warning noise of a defective elevator in one of the ancient, ruined downtown hotels. I am living, I have lived, I will never live, he said to himself, and with his thoughts came every word, every sound; insects squeaked and raced, and he half sank into a complex body of homeostatic machinery located somewhere in Tri-Plan's labs.

He wanted to say something to Sarah. Opening his mouth he tried to bring forth words—a specific string of them out of the enormous mass of them brilliantly lighting his mind, scorching him with their utter meaning.

His mouth burned. He wondered why.

Frozen against the wall, Sarah Benton opened her eyes and saw the curl of smoke ascending from Poole's half-opened mouth. Then the roby sank down, knelt on elbows and knees, then slowly spread out in a broken, crumpled heap. She knew without examining it that it had "died."

Poole did it to itself, she realized. And it couldn't feel pain; it said so itself. Or at least not very much pain; maybe a little. Anyhow, now it is over.

I had better call Mr. Danceman and tell him what's happened, she decided. Still shaky, she made her way across the room to the fone; picking it up, she dialed from memory.

It thought I was a stimulus-factor on its reality tape, she said to herself. So it thought I would die when it "died." How strange, she thought. Why did it imagine that? It had never been plugged into the real world; it had "lived" in an electronic world of its own. How bizarre.

"Mr. Danceman," she said, when the circuit to his office had been put through. "Poole is gone. It destroyed itself right in front of my eyes. You'd better come over."

"So we're finally free of it."

"Yes, won't it be nice?"

Danceman said, "I'll send a couple of men over from the shop." He saw past her, made out the sight of Poole lying by the kitchen table. "You go home and rest," he instructed Sarah. "You must be worn out by all this."

"Yes," she said. "Thank you, Mr. Danceman." She hung up and stood, aimlessly.

And then she noticed something.

My hands, she thought. She held them up. Why is it I can see through them?

The walls of the room, too, had become ill-defined.

Trembling, she walked back to the inert roby, stood by it, not knowing what to do. Through her legs the carpet showed, and then the carpet became dim, and she

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Of all the younger writers who have made a name for themselves in the last half-dozen years, Larry Niven is certainly one of the best—perhaps the best—practitioners of the short story, whether hard sf or fantasy. Mr. Niven calls this story fantasy ("I regard time travel as fantasy, not sf.") Its hero is sent back in time to get a horse, which is not your usual portentous time-travel itinerary, but under Mr. Niven's sure hand, it turns into one of the most entertaining and surprising stories on the subject that we've ever seen.

GET A HORSE!

by Larry Niven

THE YEAR WAS 750 AA (ANTE Atomic) or 1200 AD (Anno Domini), approximately. Hanville Svetz stepped out of the extension cage and looked about him.

To Svetz the atomic bomb was eleven hundred years old and the horse was a thousand years dead. It was his first trip into the past. His training didn't count; it had not included actual time-travel, which cost several million commercials a shot. Svetz was groggy from the peculiar gravitational side-effects of time-travel. He was high on pre-industrial-age air, and drunk on his own sense of destiny; while at the same time he was not really convinced that he had *gone* anywhere. Or anywhen. Trade joke.

He was not carrying the anesthetic rifle. He had come to get a horse; he had not expected to meet one at the door. How big was a horse? Where were horses found? Consider what the institute had had to go on: a few pictures in a salvaged children's book, and an old legend, not to be trusted, that the horse had once been used as a kind of animated vehicle!

In an empty land beneath an overcast sky, Svetz braced himself with one hand on the curved flank of the extension cage. His head was spinning. It took him several seconds to realize that he was looking at a horse.

It stood fifteen yards away, regarding Svetz with large intelligent brown eyes. It was much

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larger than he had expected. Further, the horse in the picture book had had a glossy brown pelt with a short mane, while the beast now facing Svetz was pure white, with a mane that flowed like a woman's long hair. There were other differences . . . but no matter, the beast matched the book too-well to be anything but a horse.

To Svetz it seemed that the horse watched him, waited for him to realize what was happening. Then, while Svetz wasted more time wondering why he wasn't holding a rifle, the horse laughed, turned and departed. It disappeared with astonishing speed.

Svetz began to shiver. Nobody had warned him that the horse might have been sentient! Yet the beast's mocking laugh had sounded far too human.

Now he knew. He was deep, deep in the past.

Not even the horse was as convincing as the emptiness the horse had left behind. No reaching apartment towers clawed the horizon. No contrails scratched the sky. The world was trees and flowers and rolling grassland, innocent of men.

The silence—It was as if Svetz had gone deaf. He had heard no sound since the laughter of the horse. In the year 1100, Post Atomic, such silence could have been found nowhere on Earth. Listening, Svetz knew at last that he had reached the British Isles before the coming of civilization. He had traveled in time.

The extension cage was the part of the time machine that did the traveling. It had its own air supply, and needed it while being pushed through time. But not here. Not before civilization's dawn; not when the air had never been polluted by fission wastes and the combustion of coal, hydrocarbons, tobaccos, wood, et al.

Now, retreating in panic from that world of the past to the world of the extension cage, Svetz nonetheless left the door open behind him.

He felt better inside the cage. Outside was an unexplored planet, made dangerous by ignorance. Inside the cage it was no different from a training mission. Svetz had spent hundreds of hours in a detailed mock-up of this cage, with a computer running the dials. There had even been artificial gravity to simulate the peculiar side-effects of motion in time.

By now the horse would have escaped. But he now knew its size, and he knew there were horses in the area. To business, then . . .

Svetz took the anesthetic rifle from where it was clamped to the wall. He loaded it with what he guessed was the right size of soluble crystalline anesthetic needle. The box held several different sizes, the smallest of which would

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knock a shrew harmlessly unconscious, the largest of which would do the same for an elephant. He slung the rifle and stood up.

The world turned grey. Svetz caught a wall clamp to stop himself from falling.

The cage had stopped moving twenty minutes ago. He shouldn't still be dizzy!—But it had been a long trip. Never before had the Institute for Temporal Research pushed a cage beyond zero PA. A long trip and a strange one, with gravity pulling Svetz's mass uniformly toward Svetz's navel . . .

When his head cleared, he turned to where other equipment was clamped to a wall.

The flight stick was a lift-field generator and power source built into five feet of pole, with a control ring at one end, a brush discharge at the other, and a bucket seat and seat belt in the middle. Compact even for Svetz's age, the flight stick was spin-off from the spaceflight industries.

But it still weighed thirty pounds with the motor off. Getting it out of the clamps took all his strength. Svetz felt queasy, very queasy.

He bent to pick up the flight stick, and abruptly realized that he was about to faint.

He hit the door button and fainted.

"We don't know where on Earth you'll wind up," Ra Chen had told him. Ra Chen was the Director of the Institute for Temporal Research, a large round man with gross, exaggerated features and a permanent air of disapproval. "That's because we can't focus on a particular time of day—or on a particular year, for that matter. You won't appear underground or inside anything because of energy considerations. If you come out a thousand feet in the air, the cage won't fall; it'll settle slowly, using up energy with a profligate disregard for our budget . . ."

And Svetz had dreamed that night, vividly. Over and over his extension cage appeared inside solid rock, exploded with a roar and a blinding flash.

"Officially, the horse is for the Bureau of History," Ra Chen had said. "In practice it's for the Secretary-General, for his twenty-eighth birthday. Mentally he's about six years old, you know. The royal family's getting a bit inbred these days. We managed to send him a picture book we picked up in 130 PA, and now the lad wants a horse . . ."

Svetz had seen himself being shot for treason, for the crime of listening to such talk.

". . . Otherwise we'd never have gotten the appropriation for this trip. It's in a good cause. We'll do some cloning from the horse before we send the original to the UN. Then—well, genes are a code, and codes can be broken. Get

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us a male, and we'll make all the horses anyone could want."

But why would anyone want even one horse? Svetz had studied a computer duplicate of the child's picture book that an agent had pulled from a ruined house a thousand years ago. The horse did not impress him.

Ra Chen, however, terrified him.

"We've never sent anyone this far back," Ra Chen had told him the night before the mission, when it was too late to back out with honor. "Keep that in mind. If something goes wrong, don't count on the rule book. Don't count on your instruments. Use your head. Your head, Svetz. God knows it's little enough to depend on . . ."

Svetz had not slept in the hours before departure.

"You're scared stiff," Ra Chen commented just before Svetz entered the extension cage. "And you can hide it, Svetz. I think I'm the only one who's noticed. That's why I picked you, because you can be terrified and go ahead anyway. Don't come back without a horse . . ."

The director's voice grew louder. "Not without a horse, Svetz. Your *head,* Svetz, your HEAD . . ."

Svetz sat up convulsively. The air! Slow death if he didn't close the door! But the door was closed, and Svetz was sitting on the floor holding his head, which hurt.

The air system had been transplanted, complete with dials, intact from a Martian sandboat. The dials read normally, of course, since the cage was sealed.

Svetz nerved himself to open the door. As the sweet, rich air of twelfth-century Britain rushed in, Svetz held his breath and watched the dials change. Presently he closed the door and waited, sweating, while the air system replaced the heady poison with its own safe, breathable mixture.

When next he left the extension cage, carrying the flight stick, Svetz was wearing another spin-off from the interstellar-exploration industries. It was a balloon, and he wore it over his head. It was also a selectively permeable membrane, intended to pass certain gasses in and others out, to make a breathing-air mixture inside.

It was nearly invisible except at the rim. There, where light was refracted most severely, the balloon showed as a narrow golden circle enclosing Svetz's head. The effect was not unlike a halo as shown in medieval paintings. But Svetz didn't know about medieval paintings.

He wore also a simple white robe, undecorated, constricted at the waist, otherwise falling in loose folds. The institute thought that such a garment was least likely to violate taboos of sex or custom. The trade kit dangled loose

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from his sash: a heat-and-pressure gadget, a pouch of corundum, small phials of additives for color.

Lastly he wore a hurt and baffled look. How was it that he could not breath the clean air of his own past?

The air of the cage was the air of Svetz's own time, and was nearly four percent carbon dioxide. The air of 750 Ante Atomic held barely a tenth of that. Man was a rare animal here and now. He had breathed little air, he had destroyed few forests, he had burnt scant fuel since the dawn of time.

But industrial civilization meant combustion. Combustion meant carbon dioxide thickening in the atmosphere many times faster than the green plants could turn it back to oxygen. Svetz was at the far end of two thousand years of adaptation to air rich in CO_2.

It takes a concentration of carbon dioxide to trigger the autonomic nerves in the lymph glands in a man's left armpit. Svetz had fainted because he wasn't breathing.

So now he wore a balloon, and felt rejected.

He straddled the flight stick and twisted the control knob on the fore end. The stick lifted under him, and he wriggled into place on the bucket seat. He twisted the knob further.

He drifted upward like a toy balloon.

He floated over a lovely land, green and untenanted, beneath a pearl-grey sky empty of contrails. Presently he found a crumbling wall. He turned to follow it.

He would follow the wall until he found a settlement. If the old legend was true—and, Svetz reflected, the horse had certainly been *big* enough to drag a vehicle—then he would find horses wherever he found men.

Presently it became obvious that a road ran along the wall. There the dirt was flat and bare and consistently wide enough for a walking man; whereas elsewhere the land rose and dipped and tilted. Hard dirt did not a freeway make; but Svetz got the point.

He followed the road, floating at a height of ten meters.

There was a man in worn brown garments. Hooded and barefoot, he walked the road with patient exhaustion, propping himself with a staff. His back was to Svetz.

Svetz thought to dip toward him to ask concerning horses. He refrained. With no way to know where the cage would alight, he had learned no ancient languages at all.

He thought of the trade kit he carried, intended not for communication, but instead of communication. It had never been field-tested. In any case it was not for casual encounters. The pouch of corundum was too small.

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Svetz heard a yell from below. He looked down in time to see the man in brown running like the wind, his staff forgotten, his fatigue likewise.

"Something scared him," Svetz decided. But he could see nothing fearful. Something small but deadly, then.

The institute estimated that man had exterminated more than a thousand species of mammal and bird and insect—some casually, some with malice—between now and the distant present. In this time and place there was no telling what might be a threat. Svetz shuddered. The brown man with the hairy face might well have run from a stinging thing destined to kill Hanville Svetz.

Impatiently Svetz upped the speed of his flight stick. The mission was taking far too long. Who would have guessed that centers of population would have been so far apart?

Half an hour later, shielded from the wind by a paraboloid force-field, Svetz was streaking down the road at sixty miles per hour.

His luck had been incredibly bad. Wherever he had chanced across a human being, that person had been just leaving the vicinity. And he had found no centers of population.

Once he had noticed an unnatural stone outcropping high on a hill. No law of geology known to Svetz could have produced such an angular, flat-sided monstrosity. Curious, he had circled above it—and had abruptly realized that the thing was hollow, riddled with rectangular holes.

A dwelling for men? He didn't want to believe it. Living within the hollows of such a thing would be like living underground. But men tend to build at right angles, and this thing was *all* right angles.

Below the hollowed stone structure were rounded, hairy-looking hummocks of dried grass, each with a man-sized door. Obviously they must be nests for very large insects. Svetz had left that place quickly.

The road rounded a swelling green hill ahead of him. Svetz followed, slowing.

A hilltop spring sent a stream bubbling downhill to break the road. Something large was drinking at the stream.

Svetz jerked to a stop in midair. *Open water: deadly poison.* He would have been hard put to say which had startled him more: the horse, or the fact that it had just committed suicide.

The horse looked up and saw him.

It was the same horse. White as milk, with a flowing abundance of snowy mane and tail, it almost had to be the horse that had laughed at Svetz and run. Svetz

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recognized the malignance in its eyes, in the moment before it turned its back.

But how could it have arrived so fast?

Svetz was reaching for the gun when the situation turned upside down.

The girl was young, surely no more than sixteen. Her hair was long and dark and plaited in complex fashion. Her dress, of strangely stiff blue fabric, reached from her neck to her ankles. She was seated in the shadow of a tree, on dark cloth spread over the dark earth. Svetz had not noticed her, might never have noticed her . . .

But the horse walked up to her, folded its legs in alternate pairs, and laid its ferocious head in her lap.

The girl had not yet seen Svetz.

"Xenophilia!" Svetz snarled the worst word he could think of. Svetz hated aliens.

The horse obviously belonged to the girl. He could not simply shoot it and take it. It would have to be purchased . . . somehow.

He needed time to think! And there was no time, for the girl might look up at any moment. Baleful brown eyes watched him as he dithered . . .

He dared waste no more time searching the countryside for a wild horse. There was an uncertainty, a Finagle factor in the math of time-travel. It manifested itself as an uncertainty in the energy of a returning extension cage, and it increased with time. Let Svetz linger too long, and he could be roasted alive in the returning cage.

Moreover, the horse had drunk open water. It would die, and soon, unless Svetz could return it to 1100 Post Atomic. Thus the beast's removal from this time could not change the history of Svetz's own world. It was a good choice . . . if he could conquer his fear of the beast.

The horse was tame. Young and slight as she was, the girl had no trouble controlling it. What was there to fear?

But there was its natural weaponry . . . of which Ra Chen's treacherous picture book had shown no sign. Svetz surmised that later generations routinely removed it before the animals were old enough to be dangerous. He should have come a few centuries later . . .

And there was the look in its eye. The horse hated Svetz, and it knew Svetz was afraid.

Could he shoot it from ambush?

No. The girl would worry if her pet collapsed without reason. She would be unable to concentrate on what Svetz was trying to tell her.

He would have to work with the animal watching him. If the girl couldn't control it—or if he

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lost her trust—Svetz had little doubt that the horse would kill him.

The horse looked up as Svetz approached, but made no other move. The girl watched too, her eyes round with wonder. She called something that must have been a question.

Svetz smiled back and continued his approach. He was a foot above the ground, and gliding at dead slow. Riding the world's only flying machine, he looked impressive as all hell, and knew it.

The girl did not smile back. She watched warily. Svetz was within yards of her when she scrambled to her feet.

He stopped the flight stick at once and let it settle. Smiling placatorially, he removed the heat-and-pressure device from his sash. He moved with care. The girl was on the verge of running.

The trade kit was a pouch of corundum, Al_2O_3, several phials of additives, and the heat-and-pressure gadget. Svetz poured corundum into the chamber, added a dash of chromic oxide, and used the plunger. The cylinder grew warm. Presently Svetz dropped a pigeon's-blood star ruby into his hand, rolled it in his fingers, held it to the sun. It was red as dark blood, with a blazing white six-pointed star.

It was almost too hot to hold. *Stupid!* Svetz held his smile rigid. Ra Chen should have warned him! What would she think when she felt the gem's unnatural heat? What trickery would she suspect?

But he had to chance it. The trade kit was all he had.

He bent and rolled the gem to her across the damp ground.

She stooped to pick it up. One hand remained on the horse's neck, calming it. Svetz noticed the rings of yellow metal around her wrist, and he also noticed the dirt.

She held the gem high, looked into its deep red fire.

"Ooooh," she breathed. She smiled at Svetz in wonder and delight. Svetz smiled back, moved two steps nearer, and rolled her a yellow sapphire.

How had he twice chanced on the same horse? Svetz never knew. But he soon knew how it had arrived before him . . .

He had given the girl three gems. He held three more in his hand while he beckoned her onto the flight stick. She shook her head; she would not go. Instead she mounted the animal.

She and the horse, they watched Svetz for his next move.

Svetz capitulated. He had expected the horse to follow the girl while the girl rode behind him on the flight stick. But if they both followed Svetz, it would be the same.

The horse stayed to one side

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and a little behind Svetz's flight stick. It did not seem inconvenienced by the girl's weight. Why should it be? It must have been bred for the task. Svetz notched his speed higher, to find how fast he could conveniently move.

Faster he flew, and faster. The horse must have a limit . . .

He was up to eight before he quit. The girl lay flat along the animal's back, hugging its neck to protect her face from the wind. But the horse ran on, daring Svetz with its eyes.

How to describe such motion? Svetz had never seen ballet. He knew how machinery moved, and this wasn't it. All he could think of was a man and a woman making love. Slippery-smooth rhythmic motion, absolute single-minded purpose, motion for the pleasure of motion. It was terrible in its beauty, the flight of the horse.

The word for such running must have died with the horse itself.

The horse would never have tired, but the girl did. She tugged on the animal's mane, and it stopped. Svetz gave her the jewels he held, made four more and gave her one.

She was crying from the wind, crying and smiling as she took the jewels. Was she smiling for the jewels, or for the joy of the ride? Exhausted, panting, she lay with her back against the warm, pulsing flank of the resting animal. Only her hand moved, as she ran her fingers repeatedly through its silver mane. The horse watched Svetz with malevolent brown eyes.

The girl was homely. It wasn't just the jarring lack of make-up. There was evidence of vitamin starvation. She was short, less than five feet in height, and thin. There were marks of childhood disease. But happiness glowed behind her homely face, and it made her almost passable, as she clutched the corundum stones.

When she seemed rested, Svetz remounted. They went on.

He was almost out of corundum when they reached the extension cage. There it was that he ran into trouble.

The girl had been awed by Svetz's jewels, and by Svetz himself, possibly because of his height or his ability to fly. But the extension cage scared her. Svetz couldn't blame her. The side with the door in it was no trouble: just a seamless spherical mirror. But the other side blurred away in a direction men could not visualize. It had scared Svetz spitless the first time he saw the time machine in action.

He could buy the horse from her, shoot it here and pull it inside, using the flight stick to float it. But it would be so much easier if . . .

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It was worth a try. Svetz used the rest of his corundum. Then he walked into the extension cage, leaving a trail of colored corundum beads behind him.

He had worried because the heat-and-pressure device would not produce facets. The stones all came out shaped like miniature hen's eggs. But he was able to vary the color, using chromic oxide for red and ferric oxide for yellow and titanium for blue; and he could vary the pressure planes, to produce cat's eyes or star gems at will. He left a trail of small stones, red and yellow and blue. . .

And the girl followed, frightened, but unable to resist the bait. By now she had nearly filled a handkerchief with the stones. The horse followed her into the extension cage.

Inside, she looked at the four stones in Svetz's hand: one of each color, red and yellow and light blue and black, the largest he could make. He pointed to the horse, then to the stones.

The girl agonized. Svetz perspired. She didn't want to give up the horse . . . and Svetz was out of corundum . . .

She nodded, one swift jerk of her chin. Quickly, before she could change her mind, Svetz poured the stones into her hand. She clutched the hoard to her bosom and ran out of the cage, sobbing.

The horse stood up to follow.

Svetz swung the rifle and shot it. A bead of blood appeared on the animal's neck. It shied back, then sighted on Svetz along its natural bayonet.

Poor kid, Svetz thought as he turned to the door. But she'd have lost the horse anyway. It had sucked polluted water from an open stream. Now he need only load the flight stick aboard.

Motion caught his eye.

A false assumption can be deadly. Svetz had not waited for the horse to fall. It was with something of a shock that he realized the truth. The beast wasn't about to fall. It was about to spear him like a cocktail shrimp.

He hit the door button and dodged.

Exquisitely graceful, exquisitely sharp, the spiral horn slammed into the closing door. The animal turned like white lightning in the confines of the cage, and again Svetz leapt for his life.

The point missed him by half an inch. It plunged past him and into the control board, through the plastic panel and into the wiring beneath.

Something sparkled and something sputtered.

The horse was taking careful aim, sighting along the spear in its forehead. Svetz did the only thing he could think of. He pulled the home-again lever.

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The horse screamed as it went into free fall. The horn, intended for Svetz's navel, ripped past his ear and tore his breathing-balloon wide open.

Then gravity returned; but it was the peculiar gravity of an extension cage moving forward through time. Svetz and the horse were pulled against the padded walls. Svetz sighed in relief.

He sniffed again in disbelief. The smell was strong and strange, like nothing Svetz had ever smelled before. The animal's terrible horn must have damaged the air plant. Very likely he was breathing poison. If the cage didn't return in time . . .

But would it return at all? It might be going anywhere, anywhen, the way that ivory horn had smashed through anonymous wiring. They might come out at the end of time, when even the black infrasuns gave not enough heat to sustain life.

There might not even be a future to return to. He had left the flight stick. How would it be used? What would they make of it, with its control handle at one end and the brush-style static discharge at the other and the saddle in the middle? Perhaps the girl would try to use it. He could visualize her against the night sky, in the light of a full moon . . . and how would that change history?

The horse seemed on the verge of apoplexy. Its sides heaved, its eyes rolled wildly. Probably it was the cabin air, thick with carbon dioxide. Again, it might be the poison the horse had sucked from an open stream.

Gravity died. Svetz and the horse tumbled in free fall, and the horse queasily tried to gore him.

Gravity returned, and Svetz, who was ready for it, landed on top. Someone was already opening the door.

Svetz took the distance in one bound. The horse followed, screaming with rage, intent on murder. Two men went flying as it charged out into the institute control center.

"It doesn't take anesthetics!" Svetz shouted over his shoulder. The animal's agility was hampered here among the desks and lighted screens, and it was probably drunk on hyperventilation. It kept stumbling into desks and men. Svetz easily stayed ahead of the slashing horn.

A full panic was developing.

"We couldn't have done it without Zeera," Ra Chen told him much later. "Your idiot tanj horse had the whole center terrorized. All of a sudden it went completely tame, walked up to that frigid bitch Zeera and let her lead it away."

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"Did you get it to the hospital in time?"

Ra Chen nodded gloomily. Gloom was his favorite expression and was no indication of his true feelings. "We found over fifty unknown varieties of bacteria in the beast's bloodstream. Yet it hardly looked sick! It looked healthy as a, healthy as a . . . it must have tremendous stamina. We managed to save not only the horse, but most of the bacteria too, for the Zoo."

Svetz was sitting up in a hospital bed, with his arm up to the elbow in a diagnostician. There was always the chance that he too had located some long-extinct bacterium. He shifted uncomfortably, being careful not to move the wrong arm, and asked, "Did you ever find an anesthetic that worked?"

"Nope. Sorry about that, Svetz. We still don't know why your needles didn't work. The tanj horse is simply immune to tranks of any kind.

"Incidentally, there was nothing wrong with your air plant. You were smelling the horse."

"I wish I'd know that. I thought I was dying."

"It's driving the internes crazy, that smell. And we can't seem to get it out of the center." Ra Chen sat down on the edge of the bed. "What bothers me is the horn on its forehead. The horse in the picture book had no horns."

"No, sir."

"Then it must be a different species. It's not really a horse, Svetz. We'll have to send you back. It'll break our budget, Svetz."

"I disagree, sir—"

"Don't be so tanj polite."

"Then don't be so tanj stupid, sir." Svetz was *not* going back for another horse. "People who kept tame horses must have developed the habit of cutting off the horn when the animal was a pup. Why not? We all saw how dangerous that horn is. Much too dangerous for a domestic animal."

"Then why does our horse have a horn?"

"That's why I thought it was wild, the first time I saw it. I suppose they didn't start cutting off horns until later in history."

Ra Chen nodded in gloomy satisfaction. "I thought so too. Our problem is that the Secretary-General is just barely bright enough to notice that his horse has a horn, and the picture book horse doesn't. He's bound to blame me."

"Mmm." Svetz wasn't sure what was expected of him.

"I'll have to have the horn amputated."

"Somebody's bound to notice the scar," said Svetz.

"Tanj it, you're right. I've got enemies at court. They'd be only too happy to claim I'd mutilated the Secretary-General's pet." Ra

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Chen glared at Svetz. "All right, let's hear *your* idea."

Svetz was busy regretting. Why had he spoken? His vicious, beautiful horse, tamely docked of its killer horn . . . he had found the thought repulsive. His impulse had betrayed him. What could they do but remove the horn?

He had it, "Change the picture book, not the horse. A computer could duplicate the book in detail, but with a horn on every horse. Use the center computer, then wipe the tape afterward."

Morosely thoughtful, Ra Chen said, "That might work. I know someone who could switch the books." He looked up from under bushy black brows. "Of course, you'd have to keep quiet."

"Yes, sir."

"Don't forget." Ra Chen got up. "When you get out of the diagnostician, you start a four weeks vacation."

"I'm sending you back for one of these," Ra Chen told him four weeks later. He opened the bestiary. "We picked up the book in a public park around ten Post Atomic; left the kid who was holding it playing with a carborundum egg."

Svetz examined the picture. "That's *ugly*. That's really ugly. You're trying to balance the horse, right? The horse was so beautiful, you've got to have one of these or the universe goes off balance."

Ra Chen closed his eyes in pain. "Just go get us the Gila monster, Svetz. The Secretary-General wants a Gila monster."

"How big is it?"

They both looked at the illustration. There was no way to tell.

"From the looks of it, we'd better use the *big* extension cage."

Svetz barely made it back that time. He was suffering from total exhaustion and extensive second-degree burns. The thing he brought back was thirty feet long, had vestigial bat-like wings, breathed fire, and didn't look very much like the illustration; but it was as close as anything he'd found.

The Secretary-General loved it.

(from page 115)

saw, through it, further layers of disintegrating matter beyond.

Maybe if I can fuse the tape-ends back together, she thought. But she did not know how. And already Poole had become vague.

The wind of early morning blew about her. She did not feel it; she had begun, now, to cease to feel.

The winds blew on.

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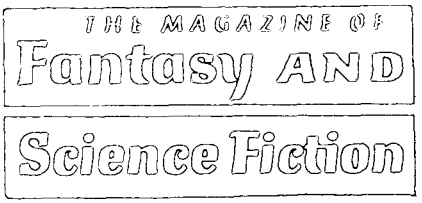

Even a science fiction magazine may be forgiven a look backward on its twentieth anniversary, and it has, in fact, been exactly twenty years since Volume 1, No. 1 of The Magazine of Fantasy appeared on the newsstands ("and Science Fiction" was added with the second issue).

Some of the more well-known stories that we've published in the past twenty years are listed at the right. Many have won awards; almost all have been frequently anthologized; some have formed the basis of novels or movies.

We're proud of the distinguished fiction we've been able to bring you in the past, but our look backward will be a brief one. We plan to make the years ahead even more memorable.

Upcoming issues will feature stories by Harlan Ellison, Robert F. Young, Robert Silverberg, Edgar Pangborn, Miriam Allen deFord, Manly Wade Wellman and many other top names in the field. Plus, some very special stories by writers you have not heard of—yet. Which is part of our continuing effort to seek out the very best among new writers and new trends in the field.

Please note the special offer on the inside back cover. Our backward look will be brief, but it includes offering you a chance to subscribe at 20-year-old prices, a bargain ride into an exciting future.

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